



East Anglia ONE North Offshore Windfarm

Appendix 12.2

Ornithology Technical Appendix

Environmental Statement Volume 3

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East Anglia ONE North Offshore Wind Farm

Appendix 12.2

Ornithology Technical Appendix

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1 INTRODUCTION

1. The proposed East Anglia ONE North project will comprise offshore wind turbines, offshore converter station, inter-array cables, interconnector cables and offshore and onshore export cables taking power to an onshore converter station. The East Anglia ONE North site covers an area of approximately 209km² located approximately 31km offshore at the nearest point to the coast (Figure 12.1).
2. The offshore ornithological assessment is informed using baseline site characterisation data collected by digital aerial survey methods, conducted by APEM. Further details of the survey methods, analysis of the data collected and the results obtained are provided in relevant sections of this technical report.
3. The aim of this report is to present full details of the baseline information from the site-specific surveys which have been used to undertake the offshore ornithology Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA).
4. Sections on aerial survey methodology (section 3) and image analysis (section 4.1) were supplied by the aerial survey contractor (APEM).

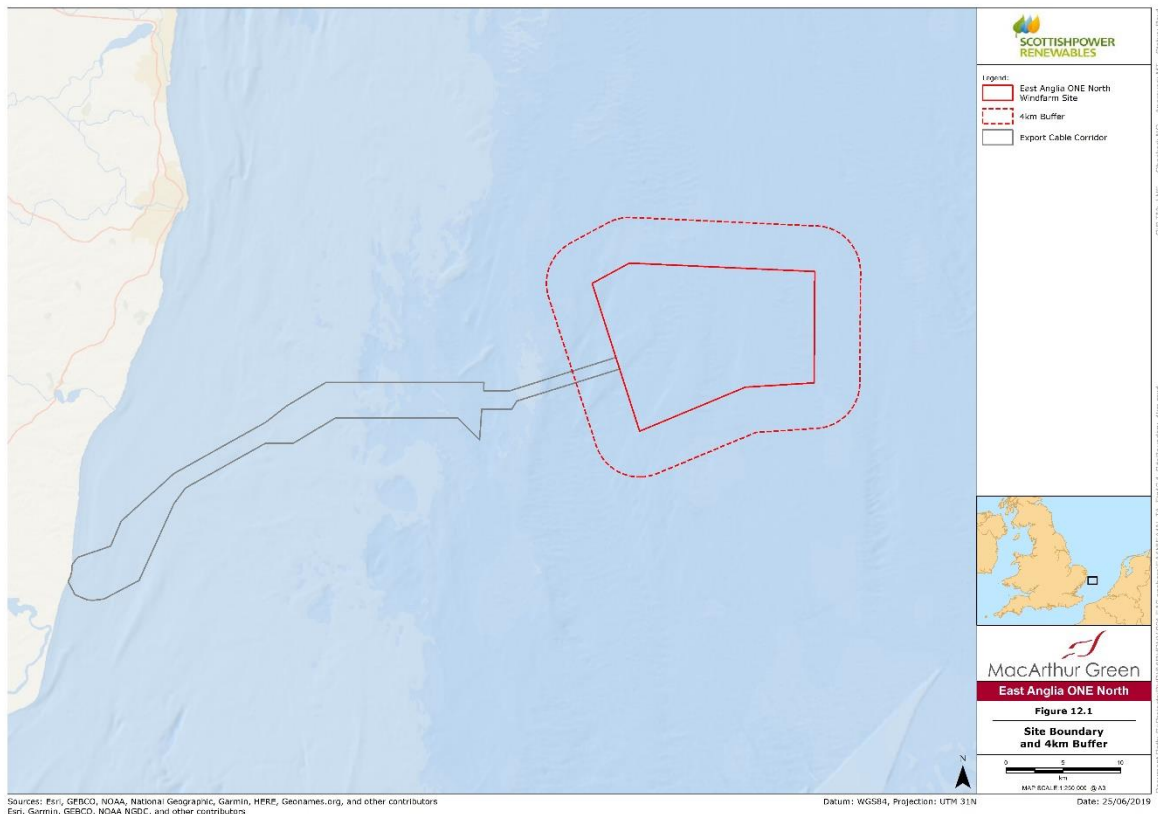


Figure 12.1. Location of the proposed East Anglia ONE North windfarm site boundary and 4km buffer and export cable corridor.

2 DATA SOURCES

5. APEM has undertaken monthly aerial surveys across the wind farm as detailed in Table 1. Surveys began in September 2016 and were completed in August 2018 (24 months in total).

Table 1. Months when aerial surveys were conducted at East Anglia ONE North.

Month	2016	2017	2018
Jan		X	X
Feb		X	X
Mar		X	X
Apr		X	X
May		X	X
Jun		X	X
Jul		X	X
Aug		X	X
Sep	X	X	
Oct	X	X	
Nov	X	X	
Dec	X	X	

3 SURVEY METHODS

6. Aerial surveys were undertaken using either Vulcan Air P68 Observer or Britten-Norman Islander twin engine survey aircraft. These surveys involved digital still image collection using a GPS-linked bespoke flight management system.
7. Survey of The East Anglia ONE North site comprised High Resolution still images taken on a grid system with a resolution of 2 cm Ground Sampling Distance (GSD) to represent a high intensity sampling regime. The Survey Area incorporates the proposed East Anglia ONE North footprint plus a 4 km buffer.
8. Survey data comprised species, count (number of individual birds), sex (where possible), age (where possible), flight height, flight direction, position (longitude and latitude), date and time stamp of image collection.
9. Where identification to species level was not possible, reference was made to aerial data collected within the Survey Area where species were identified in order to apportion records at group level to species level (this process of apportionment is described in a later section).

3.1 Species Identification

10. There are occasions when it is not possible to identify a particular bird on the aerial survey image to species level and the image is therefore assigned to a higher level group e.g. 'small gulls' or 'black-backed gulls'. Methods for assigning these unidentified birds to appropriate species categories are discussed in the data analysis section.

4 DATA ANALYSIS

4.1 Image Analysis

11. The images were analysed to enumerate birds to species level, where possible. Internal QA was carried out by APEM on each survey. Images were assessed in batches with a different staff member responsible for each batch. Each image containing birds and / or marine mammals was reviewed and checked by APEM's dedicated QA Manager, ensuring that 100% of birds recorded were subject to internal QA to ensure the species identification is correct. Images containing no birds and / or marine mammals were removed and kept separately for further internal QA. Of these 'blank' images, 10% were randomly selected for internal QA by a different staff member to that which initially analysed the imagery. If there was less than 90% agreement, the entire batch would be re-analysed as part of the QA procedures. Following internal QA, external QA was carried out by the British Trust for Ornithology (BTO), who provide an independent third party assessment of 10% of the birds recorded in each survey. Birds identified from the images were 'snagged' (i.e. located within the images) and categorised normally to species, but sometimes to standard JNCC categories.

4.2 Bird Abundance and Density Estimates

12. Raw data were supplied as aircraft GPS track logs, containing details for each image location and observation logs, containing details of all objects (seabird, marine mammal, vessel, etc.) recorded. The two datasets were merged using the image ID to obtain a single dataset. All non-bird records were removed prior to analysis. Analysis was conducted for each survey separately. Bird locations were assigned to the following sub-zones; wind farm, wind farm plus 2 km buffer and wind farm plus 4km buffer (note that each buffer width also included the wind farm data).
13. Density (birds/km²) and abundance were estimated using design-based methods, with the density estimated for the surveyed area (i.e. the sum of all the image footprints) and multiplied up to the total area to obtain an abundance estimate. This makes the assumption that the surveyed sample is representative of the unsurveyed region, thus the design of survey is important (hence 'design-based').
14. Confidence intervals for the density estimates of each species were obtained using a bootstrap resampling method. For each survey, images were drawn randomly (with replacement) from the dataset until the same number of images as the original sample was obtained (e.g. if the survey for a particular month comprised 350 images, each resampled dataset also contained 350 images, drawn with replacement from the original dataset). This process was repeated 1,000 times and the density and abundance calculated for each resampled dataset. The upper and lower 95% confidence limits were calculated across the 1,000 samples to estimate sampling variation. The width of the confidence interval obtained using this method reflects the degree of aggregation in the species, with highly aggregated species estimated with lower precision (i.e. species observed frequently as individuals will have a small range of estimated densities, while species recorded in occasional large groups will have a wide range of estimated densities).

15. The bootstrap resampled values were also used to obtain representative density and abundance values for each calendar month. This was achieved by combining the bootstrap samples for each month (e.g. 1,000 samples for the first January survey and 1,000 samples for the second January survey, etc.) from which the overall median and 95% confidence intervals for that month were extracted. This ensured that the values for each month were derived from all of the data available. In addition to the overall monthly medians (and confidence intervals) calculated in this manner, a mean value for each month was also calculated as the average of the individual survey estimates for that month.
16. Birds were recorded as either sitting on the sea surface ('sitting') or in flight ('flying'). Analysis was conducted on each subset separately and also combined across both ('all birds'). The combined estimates have been used as the overall densities and abundances required for displacement analysis, while birds in flight have been used for the collision risk modelling.
17. All analysis and data manipulation was conducted using R (R Development Core Team 2012).

4.3 Assignment of unidentified birds to species

18. To avoid underestimating species abundance due to the omission of birds which could not be positively identified to species level, the density of each unidentified bird grouping (e.g. large gulls, small gulls, etc.) was estimated (using the methods described above) and then added proportionately to each member species of that group. The proportions were calculated from the ratios of positively identified birds in that group. This was undertaken on a survey by survey basis, using the ratio from the largest area (i.e. within the 4km buffer) to ensure the largest possible sample size for estimation.
19. The unidentified groups and the species which they comprise are listed in Table 2.

Table 2. Bird species which could be included in relevant unidentified groups. Note that 'Black-backed gulls' were assigned to species before 'Large Gulls'.

Species	Unidentified Group
Red-throated diver	Divers
Black-throated diver	
Great northern diver	
Sabine's gull	Small gulls
Kittiwake	
Black-headed gull	
Little gull	
Common gull	
Great black-backed gull	Black-backed gulls
Lesser black-backed gull	
Great black-backed gull	Large gulls
Lesser black-backed gull	
Herring gull	
Common tern	'Commic' Tern
Arctic tern	

Species	Unidentified Group
Guillemot	Guillemot / Razorbill
Razorbill	

20. For common tern and Arctic tern no species-specific identification is possible (size and plumage features are so close that it is impossible to separate them) and as a result there is no information on which to apportion these two species. They remain grouped in the data as 'commic' tern.
21. Although apportioning of unidentified groups to species provides the best available approach to estimating numbers of each species, this method may introduce biases, for example if one species in a group is easier to identify to species than others in the same general group, then the apportioning may overestimate numbers of the easily identified species and correspondingly underestimate numbers of the less easily identified species. This needs to be considered when assessing densities of species for which a significant proportion of birds had to be assigned to an unidentified group.

4.4 Availability Bias

22. Guillemots and razorbills spend a proportion of their time foraging beneath the water surface and therefore some individuals present in a given area will not be observable in aerial images. Density and abundance estimates need to be adjusted to allow for these unobserved individuals.
23. A fixed species-specific correction factor was applied to the number of each auk species recorded on the sea surface. The values used were those recommended by JNCC in its submission during the examination phase of East Anglia ONE (JNCC 2013), referred to as Method C, which stated that 24% of guillemots and 17% of razorbills are underwater at any time (these percentages do not include birds in flight).
24. Density and abundance for guillemot and razorbill are presented both with and without the application of this method, with the corrected densities being used in the assessment.

4.5 Spatial Distributions

25. Maps of the wind farm sites and bird locations are provided in Appendix 12.2 Annex 6. For species recorded in low numbers these figures plot all the observations (i.e. obtained across all surveys), while more commonly recorded species are combined by season (using the definitions in Furness 2015). Note that for the latter, where months contain overlapping seasons (e.g. breeding and migration) these have been assigned to migration, since for almost all species the wind farms are located beyond foraging range of breeding colonies. The exception to this is lesser black-backed gull for which birds breeding at colonies in East Anglia may be present, so the full breeding season period is more appropriate in order to provide precautionary assessments. The seasons used are detailed in Table 3.

Table 3. Species-specific seasonal definitions and biologically defined minimum population sizes (in brackets) have been taken from Furness (2015).

Species	Breeding	Migration-free breeding	Migration - autumn	Winter	Migration - spring	Non-breeding
Red-throated diver	Mar-Aug	May-Aug	Sep-Nov (13,277)	Dec-Jan (10,177)	Feb-Apr (13,277)	
Black-throated diver*	Apr-Aug	May-Aug				Aug-Apr
Great northern diver	-	-	Sep-Nov	Dec-Feb	Mar-May	Sep-May (200)
Fulmar	Jan-Aug	Apr-Aug	Sep-Oct (957,502)	Nov (568,736)	Dec-Mar (957,502)	-
Gannet	Mar-Sep	Apr-Aug	Sep-Nov (456,298)	-	Dec-Mar (248,385)	-
Arctic skua	May-Jul	Jun-Jul	Aug-Oct (6,427)	-	Apr-May (1,227)	-
Great skua	May-Aug	May-Jul	Aug-Oct (19,556)	Nov-Feb (143)	Mar-Apr (8,485)	-
Puffin	Apr-Aug	May-Jun	Jul-Aug	Sep-Feb	Mar-Apr	Mid-Aug-Mar (231,957)
Razorbill	Apr-Jul	Apr-Jul	Aug-Oct (591,874)	Nov-Dec (218,622)	Jan-Mar (591,874)	-
Guillemot	Mar-Jul	Mar-Jun	Jul-Oct	Nov	Dec-Feb	Aug-Feb (1,617,306)
Commic tern**	May-Aug	Jun	Jul-Sep (308,841)	-	Apr-May (308,841)	-
Kittiwake	Mar-Aug	May-Jul	Aug-Dec (829,937)	-	Jan-Apr (627,816)	-
Little gull (Not included in Furness 2015)	Apr-Jul	May-Jul	-	-	-	Aug-Apr
Lesser black-backed gull	Apr-Aug	May-Jul	Aug-Oct (209,007)	Nov-Feb (39,314)	Mar-Apr (197,483)	-
Herring gull	Mar-Aug	May-Jul	Aug-Nov	Dec	Jan-Apr	Sep-Feb (466,511)
Great black-backed gull	Mar-Aug	May-Jul	Aug-Nov	Dec	Jan-Apr	Sep-Mar (91,399)

* Not included in Furness (2015). Natural England (2012) states: Breeding black-throated divers migrate to saltwater habitats from August, returning to their breeding sites from April. Birds are also seen in small numbers on eastward passage through the English Channel in April and May.

** commic tern' is used to include common terns and Arctic terns, as these species are not readily identified to species from the survey data.

4.6 Flight Height

26. Where flying birds were captured in a suitable orientation, their dimensions (body length and wingspan) were estimated. Using these values the height of the bird above the sea surface was estimated by APEM by comparison with the length of museum specimens. However, following a review of their data collection and analysis methods, the aerial survey contractors advised ScottishPower Renewables that the flight height estimates were not reliable.

4.7 Collision Risk Modelling

27. Collision risk modelling (CRM) was conducted using the deterministic Band CRM Options 1 and 2. Following a review of their data collection and analysis methods, the aerial survey contractors advised Scottish Power that the flight height estimates were not sufficiently reliable for use in collision risk modelling. Consequently, and in agreement with Natural England, the collision mortalities used for impact assessment were those calculated using option 2 of the Band model, with flight heights obtained from the BTO generic flight height dataset (Johnston et al. 2014a,b). Option 1 collision estimates have also been calculated and are provided in this technical appendix for information.
28. Natural England advised that uncertainty in seabird density, flight height (derived from the seabird flight height data in Johnston et al. 2014a,b) and avoidance rates should be included in the collision mortality estimates. To do this the CRM was run using the mean values for each of the above list of parameters as well as using the upper and lower 95% confidence interval values. In addition, it is evident that the values for nocturnal activity used in the Band CRM for most species are a significant over-estimate (e.g. Furness et al. 2018). Therefore, uncertainty in this parameter has also been incorporated for gannet, kittiwake, lesser black-backed gull and great black-backed gull.
29. Annual totals are calculated as the sum of the monthly estimates.
30. Recent advice from Natural England has suggested that CRM should be presented with the following upper and lower nocturnal activity rates for gannet (0% and 25%) and for kittiwake, lesser black-backed gull, herring gull and great black-backed gull (25% and 50%). This is a revision to the previous guidance to use only the higher of each pair of values.
31. However, for gannet, a review of evidence from tracking studies has revealed that appropriate (and still precautionary) values for the breeding season and nonbreeding season respectively are 8% (SE 2.7%) and 4% (SE 0.4%) (Furness et al. 2018). Therefore, as the evidence based seasonal values for gannet represent a significant improvement over the previously categorical values applied, outputs using these have rates are also provided.
32. The input parameters for the collision modelling are provided in Appendix 12.2 Annex 3 and the outputs are presented in Appendix 12.2 Annex 4.

5 ORNITHOLOGY BASELINE

5.1 Overview of Bird Species Recorded

33. The following bird species (Table 4) were recorded during surveys within The East Anglia ONE North wind farm site plus 4km buffer.

Table 4. Bird species recorded during surveys of The East Anglia ONE North site and the 4km buffer between September 2016 and August 2018. Groups in italics were those that could not be identified to species level. These have been apportioned to species for analysis (see text for methods).

Species	Site	
	Wind farm	4km buffer
Red-throated Diver	X	X
Fulmar	X	X
Gannet	X	X
Cormorant		
Great Skua		X
Puffin		
Razorbill	X	X
Guillemot	X	X
<i>Guillemot/Razorbill</i>	X	X
Sandwich tern	X	X
Commic Tern	X	X
Kittiwake	X	X
Black-headed Gull	X	X
Little Gull	X	X
Mediterranean gull		X
Common Gull	X	X
<i>Small Gull Species</i>	X	X
Lesser Black-backed Gull	X	X
Herring Gull	X	X
Great Black-backed Gull	X	X
<i>Large Gull Species</i>	X	X

34. This Technical Appendix has six annexes containing additional data and analyses.
35. Appendix 12.2 Annex 1 provides tables of the median, mean and 95% confidence intervals for seabird density and abundance calculated for each calendar month for each species recorded. For each species, density and abundance are presented for all individuals observed (i.e. in flight and on the sea), and also for birds in flight only, and on the sea only. For guillemot and razorbill these tables include adjustment for availability bias (birds on the sea multiplied by species-specific correction factors for birds underwater) and for all species which were included in higher level groupings (e.g. large gulls) the unidentified individuals were added to the relevant species using the proportions of identified species.
36. Appendix 12.2 Annex 2 provides tables of density and abundance for each of the 24 individual surveys. For each species, density and abundance are presented for all individuals observed (in flight and on the sea), in flight only, and on the sea only. For guillemot and razorbill, additional tables are provided with and without the inclusion of adjustment for

availability bias (birds on the sea multiplied by a correction factor) and for species which were included in higher level groupings (e.g. large gulls) tables are provided with and without the addition of unidentified individuals to the relevant species using the proportions of identified species.

37. Appendix 12.2 Annex 3 provides tables of the input parameters used for the collision risk modelling.
38. Appendix 12.2 Annex 4 provides the monthly collision mortality predictions (including upper and lower estimates and using options 1 and 2). Collisions were calculated for two candidate wind turbine models (250m and 300m (based on the wind turbines blade tip height).
39. Appendix 12.2 Annex 5 provides provides graphs of population abundance on East Anglia ONE North, with and without the 4km buffer and with design based confidence intervals. These are for all birds observed (i.e. both in flight and on the water) and include assignment of unidentified birds.
40. Appendix 12.2 Annex 6 provides maps illustrating where birds were recorded on East Anglia ONE North during all aerial surveys combined.

5.2 Summary species accounts

41. The following species accounts use the values in Technical Appendix 12.2 Annex 1 for birds recorded both in flight and on the sea surface and include unidentified birds apportioned as detailed above and, for guillemot and razorbill, adjustment for birds expected to be underwater during the surveys.

5.2.1 Red-throated diver

42. Red-throated divers were recorded between November and April on East Anglia ONE North and the survey buffer (Annex 1 Table 1.1a). The estimated mean peak wind farm population estimate was 157 (February). Figure 12.6.1 provides locations for all diver species recorded.

5.2.2 Fulmar

43. Fulmars were recorded in all months on the East Anglia ONE North and the survey buffer (Annex 1 Table 2.1a). The estimated mean peak wind farm population was 430 (October). Figure 12.6.2 provides locations for all fulmars recorded.

5.2.3 Gannet

44. Gannets were recorded in all months on East Anglia ONE North and the survey buffer (Annex 1 Table 3.1a). The estimated mean peak wind farm population was 266 (November). Figure 12.6.3 provides locations for all gannets recorded.

5.2.4 Great skua

45. Great skuas were only recorded in October in the East Anglia ONE North survey buffer, with a wind farm and 4km buffer population estimate of 8 (Annex 1 Table 4.1a), although the

estimated mean peak wind farm population was zero. Figure 12.6.4 provides locations for all skua species recorded.

5.2.5 *Razorbill*

46. Razorbills were recorded in all months on East Anglia ONE North and the survey buffer (Annex 1 Table 5.1a). The estimated mean peak wind farm population, including apportioned unidentified birds and adjusting for availability bias, was 231 (April). Figure 12.6.5 provides locations for all razorbills recorded and Figure 12.6.7 provides locations for all razorbills and guillemots which could not be assigned to species.

5.2.6 *Guillemot*

47. Guillemots were recorded in all months on East Anglia ONE North and the survey buffer (Annex 1 Table 6.1a). The estimated mean peak wind farm population, including apportioned unidentified birds and adjusting for availability bias, was 3,083 (April). Figure 12.6.6 provides locations for all guillemots recorded and Figure 12.6.7 provides locations for all razorbills and guillemots which could not be assigned to species.

5.2.7 *Sandwich tern*

48. Sandwich terns were recorded in May on the East Anglia ONE North site (Annex 1 Table 7.1a), but not in any other months. The estimated mean peak wind farm population was 4 individuals. Figure 12.6.8 provides locations for all tern species recorded.

5.2.8 *Commic tern*

49. Commic terns (common tern and Arctic tern combined due to the difficulty of distinguishing between these two species) were recorded between April and August on East Anglia ONE North and the survey buffer (Annex 1 Table 8.1a). The estimated mean peak wind farm population was 35 (May and August), which were the only two months when commic terns were present in the wind farm area. Figure 12.6.8 provides locations for all tern species recorded.

5.2.9 *Kittiwake*

50. Kittiwakes were recorded in all months on East Anglia ONE North and the survey buffer (Annex 1 Table 9.1a). The estimated mean peak wind farm population, including apportioned unidentified birds, was 283 (April). Figure 12.6.9 provides locations for all kittiwakes recorded and Figure 12.6.14 provides locations for all unidentified gulls recorded.

5.2.10 *Black-headed gull*

51. Black-headed gulls were recorded in low numbers in August and November on East Anglia ONE North and the survey buffer (Annex 1 Table 10.1a). The estimated mean peak wind farm population, including apportioned unidentified birds, was 5 (November). Figure 12.6.10 provides locations for all small gull species (except kittiwake) recorded and Figure 12.6.14 provides locations for all unidentified gulls recorded.

5.2.11 *Little gull*

52. Little gulls were recorded in January, April and October on East Anglia ONE North and the survey buffer (Annex 1 Table 11.1a). The estimated mean peak wind farm population, including apportioned unidentified birds, was 19 (April). Figure 12.6.10 provides locations for all small gull species (except kittiwake) recorded and Figure 12.6.14 provides locations for all unidentified gulls recorded.

5.2.12 *Mediterranean gull*

53. Mediterranean gulls were recorded in August only on East Anglia ONE North survey buffer with a wind farm and 4km or 2km buffer population estimate of 5 (Annex 1 Table 12.1a), although the estimated mean peak wind farm population was zero. Figure 12.6.10 provides locations for all small gull species (except kittiwake) recorded.

5.2.13 *Common gull*

54. Common gulls were recorded in January, February, March, April, July, October, November and December on East Anglia ONE North and the survey buffer (Annex 1 Table 13.1a). The estimated mean peak wind farm population, including apportioned unidentified birds, was 19 (February). Figure 12.6.10 provides locations for all small gull species (except kittiwake) recorded and Figure 13.6.14 provides locations for all unidentified gulls recorded.

5.2.14 *Lesser black-backed gull*

55. Lesser black-backed gulls were recorded in all months except January, June and August on East Anglia ONE North and the survey buffer (Annex 1 Table 14.1a). The estimated mean peak wind farm population, including apportioned unidentified birds, was 41 (July and October). Figure 12.6.11 provides locations for all lesser black-backed gulls recorded and Figure 12.6.14 provides locations for all unidentified gulls recorded.

5.2.15 *Herring gull*

56. Herring gulls were recorded in all months except January, May, June, and August on East Anglia ONE North and the survey buffer (Annex 1 Table 15.1a). The estimated mean peak wind farm population, including apportioned unidentified birds, was 58 (September). Figure 12.6.12 provides locations for all herring gulls recorded and Figure 12.6.14 provides locations for all unidentified gulls recorded.

5.2.16 *Great black-backed gull*

57. Great black-backed gulls were recorded in all months except May on East Anglia ONE North and the survey buffer (Annex 1 Table 16.1a). The estimated mean peak wind farm population, including apportioned unidentified birds, was 31 (February). Figure 12.6.13 provides locations for all great black-backed gulls recorded and Figure 12.6.14 provides locations for all unidentified gulls recorded.

5.3 Survey times

58. The date and start and end times for each aerial survey are provided in Table 5.

Survey number	Date	Start time	End time
1	09/09/2016	16:45	17:39
2	06/10/2016	09:13	10:58
3	11/11/2016	10:44	12:03
4	29/12/2016	12:52	14:08
5	10/01/2017	09:45	11:03
6	20/02/2017	14:26	15:44
7	08/03/2017	14:02	15:13
8	07/04/2017	11:53	12:35
9	16/05/2017	16:13	17:01
10	01/06/2017	16:06	16:52
11	14/07/2017	14:45	15:32
12	01/08/2017	17:29	18:13
13	06/09/2017	09:22	10:08
14	03/10/2017	10:15	11:01
15	06/11/2017	09:59	10:43
16	04/12/2017	13:59	14:40
17	07/01/2018	14:10	14:59
18	16/02/2018	11:49	12:32
19	14/03/2018	10:42	11:27
20	06/04/2018	08:04	09:19
21	04/05/2018	07:28	10:37
22	20/06/2018	16:55	17:50
23	03/07/2018	15:08	17:31
24	01/08/2018	09:45	10:33

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East Anglia ONE North Offshore Wind Farm

Appendix 12.2

Offshore Ornithology

Annex 1

Monthly seabird density and abundance

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1 INTRODUCTION

1. This appendix provides tables of seabird density and abundance in each calendar month for each species recorded on East Anglia ONE North.
2. The tables provide density and abundance estimates for species recorded on the East Anglia ONE North site and 4km buffer. These have been derived from the 24 surveyed months over which data was collected (September 2016 – August 2018).
3. For each species the tables follow a sequence of #.1 all bird recorded, #.2 birds recorded in flight, #.3 birds recorded on the sea surface. For each table number there is a matched pair (a and b) providing abundance and density respectively.
4. A key to the table numbering is provided in Table A1.
5. Monthly densities (birds per km²) and abundances are summarised as the median, mean and 95% confidence range, derived from 1,000 nonparametric bootstrap samples. The median and confidence intervals were calculated by pooling all the bootstrap samples for each month. Thus, for all months these have been calculated from 2,000 samples in each month. The mean was calculated as the average of the individual monthly median values (i.e. across one or two estimates).
6. For species groups which include unidentified individuals (e.g. large gulls) these have been added to the contributory species (e.g. large gulls comprise herring gull, lesser black-backed gull and great black-backed gull) on the basis of the proportions of positively identified individuals in the same survey. For example, if a survey included individuals categorised as large gulls, and 35 positively identified herring gulls, 10 positively identified lesser black-backed gulls and 5 positively identified great black-backed gulls, then 70%, 20% and 10% of the large gulls would be assigned to each species respectively. If there were unidentified birds, but no positively identified birds recorded in a survey, the average species ratios from the months in which the species were recorded was used to apportion the unidentified records.
7. For guillemot and razorbill, adjustment was made to account for availability bias, with birds recorded on the sea multiplied by a species-specific correction factor to account for individuals expected to be underwater when the image was taken. The values used were those advised by JNCC (2013)¹; 1.316 and 1.204 for guillemot and razorbill respectively, to account for estimates that 24% and 17% of these species are underwater at any given time.

¹ JNCC 2013. JNCC expert statement on ornithological issues for written representations in respect of East Anglia One offshore windfarm. 30 July 2013.

Table A1. Key to species density and abundance tables. Each table is provided as 'a' and 'b' for abundance and density respectively.

Species	All birds	In Flight	On Sea
Red-throated diver	1.1	1.2	1.3
Fulmar	2.1	2.2	2.3
Gannet	3.1	3.2	3.3
Great skua	4.1	4.2	4.3
Razorbill	5.1	5.2	5.3
Guillemot	6.1	6.2	6.3
Sandwich tern	7.1	7.2	7.3
Commic tern	8.1	8.2	8.3
Kittiwake	9.1	9.2	9.3
Black-headed gull	10.1	10.2	10.3
Little gull	11.1	11.2	11.3
Mediterranean gull	12.1	12.2	12.3
Common gull	13.1	13.2	13.3
Lesser black-backed gull	14.1	14.2	14.3
Herring gull	15.1	15.2	15.3
Great black-backed gull	16.1	16.2	16.3

Table 1.1a. Red-throated Diver design-based abundance estimates of birds in flight and on sea.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	28.95	29.03	5.79-58.23	50.25	49.10	10.59-89.33	57.11	57.73	9.52-116.08
Feb	102.34	156.79	0-383.35	174.10	262.69	5.96-616.96	260.32	343.48	11.77-774.61
Mar	0.00	9.72	0-48.6	20.82	20.89	0-52.39	65.81	65.00	9.4-128.32
Apr	0.00	0.00	0-0	9.02	9.62	0-30.67	24.65	31.67	0-91.87
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	14.16	0-56.64	0.00	15.43	0-61.72	0.00	13.91	0-55.65
Dec	0.00	3.08	0-18.47	29.36	35.24	0-97.85	58.07	66.27	11.61-150.98

Table 1.1b. Red-throated Diver design-based density estimates of birds in flight and on sea.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.14	0.14	0.03-0.28	0.15	0.14	0.03-0.26	0.12	0.12	0.02-0.23
Feb	0.49	0.75	0-1.84	0.51	0.77	0.02-1.82	0.53	0.69	0.02-1.56
Mar	0.00	0.05	0-0.23	0.06	0.06	0-0.15	0.13	0.13	0.02-0.26
Apr	0.00	0.00	0-0	0.03	0.03	0-0.09	0.05	0.06	0-0.19
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	0.07	0-0.27	0.00	0.05	0-0.18	0.00	0.03	0-0.11
Dec	0.00	0.01	0-0.09	0.09	0.10	0-0.29	0.12	0.13	0.02-0.3

Table 1.2a. Red-throated Diver design-based abundance estimates of birds in flight.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Feb	0	4.56	0-27.38	0	4.98	0-29.85	0	4.5	0-27.02
Mar	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Apr	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
May	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Jun	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Jul	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Aug	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Sep	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Oct	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Nov	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0
Dec	0	0.00	0-0	0	0.00	0-0	0	0.0	0-0

Table 1.2b. Red-throated Diver design-based density estimates of birds in flight.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0.02	0-0.13	0	0.01	0-0.09	0	0.01	0-0.05
Mar	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Sep	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0

Table 1.3a. Red-throated Diver design-based abundance estimates of birds on the sea surface.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	28.95	29.03	0-58.23	50.25	49.10	10.59-89.33	57.11	57.73	9.52-110.55
Feb	97.78	152.23	0-374.22	179.07	257.72	5.81-607.01	263.44	338.97	11.77-774.61
Mar	0.00	9.72	0-48.6	20.96	20.89	0-52.39	65.81	65.00	9.4-128.32
Apr	0.00	0.00	0-0	9.02	9.62	0-30.67	24.65	31.67	0-91.87
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	14.16	0-56.64	0.00	15.43	0-61.72	0.00	13.91	0-55.65
Dec	0.00	3.08	0-18.47	29.36	35.24	0-97.85	58.07	66.27	11.61-150.98

Table 1.3b. Red-throated Diver design-based density estimates of birds on the sea surface.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.14	0.14	0-0.28	0.15	0.14	0.03-0.26	0.12	0.12	0.02-0.22
Feb	0.47	0.73	0-1.8	0.53	0.76	0.02-1.79	0.53	0.68	0.02-1.56
Mar	0.00	0.05	0-0.23	0.06	0.06	0-0.15	0.13	0.13	0.02-0.26
Apr	0.00	0.00	0-0	0.03	0.03	0-0.09	0.05	0.06	0-0.19
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	0.07	0-0.27	0.00	0.05	0-0.18	0.00	0.03	0-0.11
Dec	0.00	0.01	0-0.09	0.09	0.10	0-0.29	0.12	0.13	0.02-0.3

Table 2.1a. Fulmar design-based abundance estimates of birds in flight and on sea.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	11.06	0-38.69
Feb	24.76	29.32	0-80.46	49.75	67.57	0-172.89	81.06	92.99	0-206.2
Mar	19.44	23.81	0-59.68	46.84	49.51	0-109.3	71.86	72.27	18.8-133.45
Apr	16.24	17.50	0-46.89	20.45	23.76	0-61.34	41.08	43.51	9.19-90.38
May	0.00	0.00	0-0	28.18	34.27	0-98.58	26.68	35.34	0-88.94
Jun	27.73	30.01	0-69.22	37.77	37.83	0-75.55	54.80	53.75	13.74-96.2
Jul	37.39	41.13	8.97-80.76	61.53	69.72	10.25-157.48	157.77	175.46	46.4-338.21
Aug	3.96	31.72	0-103.09	8.70	52.22	0-156.67	49.90	65.16	0-157.65
Sep	15.49	16.11	0-46.48	25.40	30.33	0-84.66	30.60	35.68	0-91.79
Oct	332.87	429.50	0-950.41	557.16	661.30	0-1442.36	597.88	734.47	0-1597.79
Nov	75.53	79.43	37.76-141.61	123.45	126.39	71.42-195.46	147.14	149.92	82.4-241.16
Dec	24.63	27.43	0-61.57	29.44	30.39	0-70.65	44.40	48.16	8.88-104.53

Table 2.1b. Fulmar design-based density estimates of birds in flight and on sea.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.02	0-0.08
Feb	0.12	0.14	0-0.39	0.15	0.20	0-0.51	0.16	0.19	0-0.42
Mar	0.09	0.11	0-0.29	0.14	0.15	0-0.32	0.15	0.15	0.04-0.27
Apr	0.08	0.08	0-0.23	0.06	0.07	0-0.18	0.08	0.09	0.02-0.18
May	0.00	0.00	0-0	0.08	0.10	0-0.29	0.05	0.07	0-0.18
Jun	0.13	0.14	0-0.33	0.11	0.11	0-0.22	0.11	0.11	0.03-0.19
Jul	0.18	0.20	0.04-0.39	0.18	0.21	0.03-0.46	0.32	0.35	0.09-0.68
Aug	0.02	0.15	0-0.5	0.03	0.15	0-0.46	0.10	0.13	0-0.32
Sep	0.07	0.08	0-0.22	0.07	0.09	0-0.25	0.06	0.07	0-0.19
Oct	1.60	2.07	0-4.57	1.64	1.95	0-4.25	1.21	1.48	0-3.23
Nov	0.36	0.38	0.18-0.68	0.36	0.37	0.21-0.58	0.30	0.30	0.17-0.49
Dec	0.12	0.13	0-0.3	0.09	0.09	0-0.21	0.09	0.10	0.02-0.21

Table 2.2a. Fulmar design-based abundance estimates of birds in flight.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	11.06	0-38.69
Feb	12.38	13.85	0-37.14	32.81	43.73	0-107.31	54.04	59.05	0-141.29
Mar	19.44	18.39	0-48.72	31.43	31.30	0-67.66	51.33	51.73	18.8-94.02
Apr	8.12	8.75	0-28.14	10.22	14.14	0-45.12	24.65	26.11	0-57.52
May	0.00	0.00	0-0	0.00	4.70	0-28.18	0.00	4.33	0-25.99
Jun	0.00	10.38	0-41.53	0.00	11.33	0-45.33	0.00	10.31	0-41.23
Jul	0.00	4.49	0-26.92	0.00	14.76	0-59.05	37.12	40.43	0-106.8
Aug	0.00	7.93	0-39.65	0.00	8.70	0-43.52	0.00	15.77	0-55.18
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	26.84	67.11	0-182.54	124.97	182.25	0-432.32	123.70	185.55	0-443.26
Nov	12.31	13.96	0-36.94	47.62	47.36	10.29-89.28	55.65	57.26	18.55-102.03
Dec	6.16	7.56	0-26.89	5.89	7.84	0-29.36	11.61	14.69	0-35.52

Table 2.2b. Fulmar design-based density estimates of birds in flight.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.02	0-0.08
Feb	0.06	0.07	0-0.18	0.10	0.13	0-0.32	0.11	0.12	0-0.29
Mar	0.09	0.09	0-0.23	0.09	0.09	0-0.2	0.10	0.10	0.04-0.19
Apr	0.04	0.04	0-0.14	0.03	0.04	0-0.13	0.05	0.05	0-0.12
May	0.00	0.00	0-0	0.00	0.01	0-0.08	0.00	0.01	0-0.05
Jun	0.00	0.05	0-0.2	0.00	0.03	0-0.13	0.00	0.02	0-0.08
Jul	0.00	0.02	0-0.13	0.00	0.04	0-0.17	0.07	0.08	0-0.22
Aug	0.00	0.04	0-0.19	0.00	0.03	0-0.13	0.00	0.03	0-0.11
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.13	0.32	0-0.88	0.37	0.54	0-1.28	0.25	0.37	0-0.9
Nov	0.06	0.07	0-0.18	0.14	0.14	0.03-0.26	0.11	0.12	0.04-0.21
Dec	0.03	0.04	0-0.13	0.02	0.02	0-0.09	0.02	0.03	0-0.07

Table 2.3a. Fulmar design-based abundance estimates of birds on the sea surface.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	15.47	0-55.7	2.98	23.85	0-77.5	27.02	33.94	0-94.19
Mar	0.00	5.41	0-27.07	2.60	18.22	0-62.46	0.00	20.53	0-71.86
Apr	8.12	8.75	0-28.14	9.02	9.62	0-30.67	16.43	17.40	0-45.94
May	0.00	0.00	0-0	0.00	29.57	0-108.44	25.99	31.01	0-88.94
Jun	18.49	19.63	0-46.22	22.66	26.50	0-60.67	41.23	43.45	9.13-82.46
Jul	35.89	36.64	8.97-74.78	51.27	54.96	10.25-118.11	120.65	135.02	37.12-267.01
Aug	0.00	23.79	0-79.3	8.70	43.52	0-139.26	39.92	49.39	0-126.12
Sep	15.49	16.11	0-46.48	25.40	30.33	0-84.66	30.60	35.68	0-91.79
Oct	273.81	362.39	0-816.06	377.51	479.05	0-1062.37	443.26	548.92	0-1206.2
Nov	61.57	65.47	24.63-122.73	72.01	79.03	30.86-144.02	83.48	92.66	35.31-176.23
Dec	17.93	19.87	0-55.41	19.57	22.55	0-58.87	27.84	33.48	0-87.11

Table 2.3b. Fulmar design-based density estimates of birds on the sea surface.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.07	0-0.27	0.01	0.07	0-0.23	0.05	0.07	0-0.19
Mar	0.00	0.03	0-0.13	0.01	0.05	0-0.18	0.00	0.04	0-0.15
Apr	0.04	0.04	0-0.14	0.03	0.03	0-0.09	0.03	0.04	0-0.09
May	0.00	0.00	0-0	0.00	0.09	0-0.32	0.05	0.06	0-0.18
Jun	0.09	0.09	0-0.22	0.07	0.08	0-0.18	0.08	0.09	0.02-0.17
Jul	0.17	0.18	0.04-0.36	0.15	0.16	0.03-0.35	0.24	0.27	0.07-0.54
Aug	0.00	0.11	0-0.38	0.03	0.13	0-0.41	0.08	0.10	0-0.25
Sep	0.07	0.08	0-0.22	0.07	0.09	0-0.25	0.06	0.07	0-0.19
Oct	1.32	1.74	0-3.92	1.11	1.41	0-3.13	0.90	1.11	0-2.44
Nov	0.30	0.31	0.12-0.59	0.21	0.23	0.09-0.42	0.17	0.19	0.07-0.36
Dec	0.09	0.10	0-0.27	0.06	0.07	0-0.17	0.06	0.07	0-0.18

Table 3.1a. Gannet design-based abundance estimates of birds in flight and on sea.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	2.90	0-17.37	0.00	2.79	0-16.75	0.00	2.76	0-16.58
Feb	9.13	12.22	0-37.14	11.92	17.91	0-59.71	29.44	31.17	0-63.05
Mar	27.07	32.42	0-87.48	41.64	44.41	10.48-94.3	65.81	68.40	28.21-122.22
Apr	35.00	69.71	0-187.57	63.17	101.03	0-255.57	97.18	136.84	0-330.75
May	17.23	17.42	0-51.69	28.18	28.88	0-65.75	34.65	35.11	8.66-71.15
Jun	27.69	27.71	0-55.46	30.33	35.33	7.55-70.78	73.07	72.06	18.27-130.56
Jul	53.84	55.34	8.97-121.52	71.78	75.67	19.68-143.57	106.80	108.70	46.4-186.91
Aug	3.96	39.65	0-118.95	26.11	73.98	0-208.89	70.40	96.69	0-236.48
Sep	54.23	64.92	7.75-143.8	101.59	112.72	33.86-226.71	198.89	204.99	107.09-329.49
Oct	80.53	80.73	25.48-139.72	135.38	135.43	74.44-195.4	211.32	218.46	139.16-326.77
Nov	218.37	266.39	61.57-528.68	441.69	467.19	160.71-864.12	641.67	709.37	358.88-1131.61
Dec	0.00	6.16	0-24.63	0.00	5.89	0-29.44	17.76	20.50	0-46.46

Table 3.1b. Gannet design-based density estimates of birds in flight and on sea.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.01	0-0.08	0.00	0.01	0-0.05	0.00	0.01	0-0.03
Feb	0.04	0.06	0-0.18	0.04	0.05	0-0.18	0.06	0.06	0-0.13
Mar	0.13	0.16	0-0.42	0.12	0.13	0.03-0.28	0.13	0.14	0.06-0.25
Apr	0.17	0.34	0-0.9	0.19	0.30	0-0.75	0.20	0.28	0-0.67
May	0.08	0.08	0-0.25	0.08	0.09	0-0.19	0.07	0.07	0.02-0.14
Jun	0.13	0.13	0-0.27	0.09	0.10	0.02-0.21	0.15	0.15	0.04-0.26
Jul	0.26	0.27	0.04-0.58	0.21	0.22	0.06-0.42	0.22	0.22	0.09-0.38
Aug	0.02	0.19	0-0.57	0.08	0.22	0-0.62	0.14	0.20	0-0.48
Sep	0.26	0.31	0.04-0.69	0.30	0.33	0.1-0.67	0.40	0.41	0.22-0.67
Oct	0.39	0.39	0.12-0.67	0.40	0.40	0.22-0.58	0.43	0.44	0.28-0.66
Nov	1.05	1.28	0.3-2.54	1.30	1.38	0.47-2.55	1.30	1.43	0.72-2.29
Dec	0.00	0.03	0-0.12	0.00	0.02	0-0.09	0.04	0.04	0-0.09

Table 3.2a. Gannet design-based abundance estimates of birds in flight.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	9.13	12.22	0-45.64	11.92	17.91	0-59.71	29.44	31.17	5.89-64.76
Mar	16.24	27.01	0-87.48	26.02	34.00	0-94.3	46.19	53.01	10.27-122.22
Apr	28.14	46.26	0-131.3	54.15	75.47	0-194.23	69.62	100.09	0-248.06
May	0.00	0.00	0-0	0.00	4.93	0-29.57	8.89	13.23	0-35.58
Jun	9.24	12.70	0-46.22	10.11	13.89	0-40.7	27.49	29.75	0-68.71
Jul	28.04	32.15	0-74.78	39.37	40.19	9.84-82.04	46.40	49.71	9.28-106.8
Aug	0.00	27.75	0-87.23	4.35	47.87	0-139.26	15.77	55.18	0-157.65
Sep	0.00	7.75	0-30.99	29.57	32.41	0-78.86	91.79	94.25	44.53-152.99
Oct	32.21	37.78	0-101.93	65.13	76.66	20.83-167.49	103.08	124.70	30.92-259.74
Nov	93.38	139.56	18.47-320.99	215.15	245.50	89.28-462.92	329.60	350.85	188.34-556.53
Dec	0.00	6.16	0-24.63	0.00	5.89	0-29.44	11.61	13.15	0-35.52

Table 3.2b. Gannet design-based density estimates of birds in flight.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.04	0.06	0-0.22	0.04	0.05	0-0.18	0.06	0.06	0.01-0.13
Mar	0.08	0.13	0-0.42	0.08	0.10	0-0.28	0.09	0.11	0.02-0.25
Apr	0.14	0.22	0-0.63	0.16	0.22	0-0.57	0.14	0.20	0-0.5
May	0.00	0.00	0-0	0.00	0.01	0-0.09	0.02	0.03	0-0.07
Jun	0.04	0.06	0-0.22	0.03	0.04	0-0.12	0.06	0.06	0-0.14
Jul	0.13	0.15	0-0.36	0.12	0.12	0.03-0.24	0.09	0.10	0.02-0.22
Aug	0.00	0.13	0-0.42	0.01	0.14	0-0.41	0.03	0.11	0-0.32
Sep	0.00	0.04	0-0.15	0.09	0.10	0-0.23	0.19	0.19	0.09-0.31
Oct	0.15	0.18	0-0.49	0.19	0.23	0.06-0.49	0.21	0.25	0.06-0.52
Nov	0.45	0.67	0.09-1.54	0.63	0.72	0.26-1.37	0.67	0.71	0.38-1.12
Dec	0.00	0.03	0-0.12	0.00	0.02	0-0.09	0.02	0.03	0-0.07

Table 3.3a. Gannet design-based abundance estimates of birds on the sea surface.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	2.90	0-17.37	0.00	2.79	0-16.75	0.00	2.76	0-16.58
Feb	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0.00	5.41	0-21.65	0.00	10.41	0-41.64	0.00	15.40	0-56.46
Apr	0.00	23.45	0-84.41	0.00	25.56	0-92.01	0.00	36.75	0-110.48
May	17.23	17.42	0-51.69	19.72	23.95	0-56.35	17.79	21.89	0-51.97
Jun	13.84	15.00	0-41.53	20.22	21.44	0-50.56	41.23	42.32	9.13-82.46
Jul	17.95	23.18	0-74.78	30.76	35.48	0-92.29	55.68	58.99	17.8-106.8
Aug	0.00	11.89	0-47.58	0.00	26.11	0-87.04	39.41	41.51	0-94.79
Sep	44.94	57.18	0-152.78	69.00	80.31	16.93-177.42	99.44	110.74	30.6-231.53
Oct	13.42	42.95	0-123.48	53.95	58.77	0-135.38	87.62	89.56	16.76-175.24
Nov	103.85	126.83	30.79-264.34	191.34	221.69	53.57-462.92	314.10	358.52	135.37-649.28
Dec	0.00	0.00	0-0	0.00	0.00	0-0	5.81	7.34	0-26.64

Table 3.3b. Gannet design-based density estimates of birds on the sea surface.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.01	0-0.08	0.00	0.01	0-0.05	0.00	0.01	0-0.03
Feb	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0.00	0.03	0-0.1	0.00	0.03	0-0.12	0.00	0.03	0-0.11
Apr	0.00	0.11	0-0.41	0.00	0.08	0-0.27	0.00	0.07	0-0.22
May	0.08	0.08	0-0.25	0.06	0.07	0-0.17	0.04	0.04	0-0.1
Jun	0.07	0.07	0-0.2	0.06	0.06	0-0.15	0.08	0.09	0.02-0.17
Jul	0.09	0.11	0-0.36	0.09	0.10	0-0.27	0.11	0.12	0.04-0.22
Aug	0.00	0.06	0-0.23	0.00	0.08	0-0.26	0.08	0.08	0-0.19
Sep	0.22	0.27	0-0.73	0.20	0.24	0.05-0.52	0.20	0.22	0.06-0.47
Oct	0.06	0.21	0-0.59	0.16	0.17	0-0.4	0.18	0.18	0.03-0.35
Nov	0.50	0.61	0.15-1.27	0.56	0.65	0.16-1.37	0.63	0.72	0.27-1.31
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.01	0.01	0-0.05

Table 4.1a. Great Skua design-based abundance estimates of birds in flight and on sea.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	4.65	0-27.91	0	8.38	0-33.51
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 4.1b. Great Skua design-based density estimates of birds in flight and on sea.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.01	0-0.08	0	0.02	0-0.07
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 4.2a. Great Skua design-based abundance estimates of birds in flight.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	4.65	0-27.91	0	8.38	0-41.89
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 4.2b. Great Skua design-based density estimates of birds in flight.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.01	0-0.08	0	0.02	0-0.08
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 4.3a. Great Skua design-based abundance estimates of birds on the sea surface.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 4.3b. Great Skua design-based density estimates of birds on the sea surface.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 5.1a. Razorbill design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	55.81	72.12	0-188.37	101.85	130.82	0-316.14	118.58	162.24	0-386.27
Feb	65.98	66.55	21.99-120.97	95.91	95.83	35.97-158.02	148.95	153.27	85.11-249.59
Mar	130.44	153.65	45.65-304.5	189.36	206.73	106.6-353.47	241.18	242.74	158.58-351.15
Apr	173.58	231.03	29.36-497.17	351.46	403.95	65.24-812.9	376.35	424.37	148.49-763.78
May	10.82	16.10	0-54.12	23.75	23.65	0-59.39	53.03	54.18	11.45-117.87
Jun	0.00	5.57	0-33.41	0.00	6.09	0-36.55	0.00	11.00	0-55.02
Jul	0.00	10.81	0-54.05	12.36	18.04	0-49.42	42.89	43.35	0-107.23
Aug	28.66	34.69	0-95.54	39.51	48.53	0-136.32	84.17	94.01	0-218.44
Sep	0.00	9.33	0-37.34	0.00	15.30	0-61.2	4.61	32.26	0-101.38
Oct	0.00	20.47	0-81.87	25.09	34.30	0-100.9	55.89	71.05	12.42-171.61
Nov	34.12	37.59	7.42-91	50.20	53.47	12.39-100.4	100.58	113.68	35.46-234.68
Dec	0.00	16.20	0-64.79	0.00	29.47	0-106.1	0.00	26.75	0-96.3

Table 5.1b. Razorbill design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.27	0.35	0-0.91	0.30	0.39	0-0.93	0.24	0.33	0-0.78
Feb	0.32	0.32	0.11-0.58	0.28	0.28	0.11-0.47	0.30	0.31	0.17-0.5
Mar	0.63	0.74	0.22-1.46	0.56	0.61	0.31-1.04	0.49	0.49	0.32-0.71
Apr	0.83	1.11	0.14-2.39	1.04	1.19	0.19-2.4	0.76	0.86	0.3-1.54
May	0.05	0.08	0-0.26	0.07	0.07	0-0.18	0.11	0.11	0.02-0.24
Jun	0.00	0.03	0-0.16	0.00	0.02	0-0.11	0.00	0.02	0-0.11
Jul	0.00	0.05	0-0.26	0.04	0.05	0-0.15	0.09	0.09	0-0.22
Aug	0.14	0.17	0-0.46	0.12	0.14	0-0.4	0.17	0.19	0-0.44
Sep	0.00	0.04	0-0.18	0.00	0.05	0-0.18	0.01	0.07	0-0.2
Oct	0.00	0.10	0-0.39	0.07	0.10	0-0.3	0.11	0.14	0.03-0.35
Nov	0.16	0.18	0.04-0.44	0.15	0.16	0.04-0.3	0.20	0.23	0.07-0.47
Dec	0.00	0.08	0-0.31	0.00	0.09	0-0.31	0.00	0.05	0-0.19

Table 5.2a. Razorbill design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Feb	0	0	0-0	0	0.00	0-0	0	4.5	0-27.02
Mar	0	0	0-0	0	5.24	0-31.43	0	9.4	0-47.01
Apr	0	0	0-0	0	0.00	0-0	0	0.0	0-0
May	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Aug	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Sep	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Nov	0	0	0-0	0	0.00	0-0	0	0.0	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.0	0-0

Table 5.2b. Razorbill design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.01	0-0.05
Mar	0	0	0-0	0	0.02	0-0.09	0	0.02	0-0.09
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 5.3a. Razorbill design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	60.63	72.12	0-181.39	95.47	130.82	0-316.14	108.59	162.24	0-392.93
Feb	65.98	66.55	21.99-120.97	95.91	95.83	35.97-158.02	141.86	148.77	85.11-238.74
Mar	130.44	153.65	45.65-304.5	188.12	201.49	106.6-340.84	228.81	233.34	148.42-321.57
Apr	190.52	226.34	29.36-497.17	350.74	403.95	76.11-825.22	387.33	424.37	138.59-752.71
May	10.84	16.17	0-54.12	23.75	23.65	0-59.39	45.14	54.18	10.77-128.59
Jun	0.00	5.57	0-33.41	0.00	6.09	0-36.55	0.00	11.00	0-44.02
Jul	0.00	10.81	0-54.05	12.36	18.04	0-49.42	38.22	43.35	0-107.23
Aug	28.66	34.69	0-95.54	39.51	48.53	0-136.32	84.17	94.01	11.72-218.44
Sep	0.00	9.33	0-37.57	0.00	15.30	0-61.2	0.00	32.26	0-110.6
Oct	0.00	20.47	0-81.87	22.42	34.30	0-100.9	60.57	71.05	12.42-171.61
Nov	34.12	37.59	7.42-79.62	50.20	53.47	12.39-99.15	100.58	113.68	35.46-223.78
Dec	0.00	16.20	0-64.79	0.00	29.47	0-106.1	0.00	26.75	0-96.3

Table 5.3b. Razorbill design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.29	0.35	0-0.87	0.28	0.39	0-0.93	0.22	0.33	0-0.79
Feb	0.32	0.32	0.11-0.58	0.28	0.28	0.11-0.47	0.29	0.30	0.17-0.48
Mar	0.63	0.74	0.22-1.46	0.55	0.59	0.31-1.01	0.46	0.47	0.3-0.65
Apr	0.92	1.09	0.14-2.39	1.03	1.19	0.22-2.43	0.78	0.86	0.28-1.52
May	0.05	0.08	0-0.26	0.07	0.07	0-0.18	0.09	0.11	0.02-0.26
Jun	0.00	0.03	0-0.16	0.00	0.02	0-0.11	0.00	0.02	0-0.09
Jul	0.00	0.05	0-0.26	0.04	0.05	0-0.15	0.08	0.09	0-0.22
Aug	0.14	0.17	0-0.46	0.12	0.14	0-0.4	0.17	0.19	0.02-0.44
Sep	0.00	0.04	0-0.18	0.00	0.05	0-0.18	0.00	0.07	0-0.22
Oct	0.00	0.10	0-0.39	0.07	0.10	0-0.3	0.12	0.14	0.03-0.35
Nov	0.16	0.18	0.04-0.38	0.15	0.16	0.04-0.29	0.20	0.23	0.07-0.45
Dec	0.00	0.08	0-0.31	0.00	0.09	0-0.31	0.00	0.05	0-0.19

Table 6.1a. Guillemot design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	982.29	1039.75	51.08-2118.33	1794.76	1883.90	83.64-3812.5	2393.85	2540.96	175.33-5054.85
Feb	333.90	339.98	187.31-564.46	576.11	575.76	368.68-890.35	898.55	912.47	596.45-1327.36
Mar	702.77	716.61	341.89-1227.85	1216.11	1279.58	876.59-1861.19	2280.87	2333.10	1235.74-3686.46
Apr	2975.53	3083.24	908.43-5355.55	4150.57	4178.67	1341.84-7129.12	4834.05	4902.53	1664.92-8353.65
May	379.25	426.04	59.1-861.39	475.69	559.14	90.8-1123.28	614.74	667.41	152.14-1286.99
Jun	0.00	6.08	0-36.49	0.00	6.65	0-39.91	12.02	15.05	0-45.21
Jul	72.32	94.94	0-236.13	138.15	181.85	0-440.64	194.98	252.28	0-597.25
Aug	208.68	232.50	26.31-479.96	344.23	379.65	57.53-755.84	530.96	583.80	91.92-1161.66
Sep	30.58	41.59	0-122.33	64.85	69.58	12.92-155.96	128.89	129.87	60.39-201.3
Oct	148.35	155.05	77.71-268.25	212.39	218.11	130.18-342.81	311.96	317.44	220.49-440.99
Nov	625.15	731.40	56.71-1540.33	991.84	1123.93	313.27-2084.51	1403.36	1486.83	549.85-2562.96
Dec	1075.68	1068.61	660.42-1490.85	1880.01	1851.73	1171.65-2548.63	2713.61	2707.45	1624.27-3812.88

Table 6.1b. Guillemot design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	4.72	5.00	0.25-10.19	5.29	5.56	0.25-11.25	4.83	5.13	0.35-10.21
Feb	1.61	1.63	0.9-2.71	1.70	1.70	1.09-2.63	1.81	1.84	1.2-2.68
Mar	3.38	3.45	1.64-5.9	3.59	3.77	2.59-5.49	4.61	4.71	2.5-7.44
Apr	14.31	14.83	4.37-25.75	12.24	12.33	3.96-21.03	9.76	9.90	3.36-16.87
May	1.82	2.05	0.28-4.14	1.40	1.65	0.27-3.31	1.24	1.35	0.31-2.6
Jun	0.00	0.03	0-0.18	0.00	0.02	0-0.12	0.02	0.03	0-0.09
Jul	0.35	0.46	0-1.14	0.41	0.54	0-1.3	0.39	0.51	0-1.21
Aug	1.00	1.12	0.13-2.31	1.02	1.12	0.17-2.23	1.07	1.18	0.19-2.35
Sep	0.15	0.20	0-0.59	0.19	0.21	0.04-0.46	0.26	0.26	0.12-0.41
Oct	0.71	0.75	0.37-1.29	0.63	0.64	0.38-1.01	0.63	0.64	0.45-0.89
Nov	3.01	3.52	0.27-7.41	2.93	3.32	0.92-6.15	2.83	3.00	1.11-5.18

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Dec	5.17	5.14	3.18-7.17	5.55	5.46	3.46-7.52	5.48	5.47	3.28-7.7

Table 6.2a. Guillemot design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	5.79	0-23.16	0.00	11.17	0-44.66	0.00	13.82	0-49.75
Feb	4.56	36.51	0-118.66	9.95	49.75	0-149.26	31.52	85.57	0-243.19
Mar	43.74	97.20	0-262.45	52.39	115.26	0-314.33	117.52	197.44	0-498.29
Apr	4.69	37.51	0-121.92	20.45	71.56	0-204.46	59.72	128.62	0-330.75
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	9.30	0-37.22	0.00	8.38	0-41.89
Nov	0.00	14.16	0-56.64	0.00	30.86	0-102.87	0.00	37.10	0-120.58
Dec	0.00	9.24	0-36.94	0.00	14.72	0-52.99	0.00	14.52	0-52.26

Table 6.2b. Guillemot design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.03	0-0.11	0.00	0.03	0-0.13	0.00	0.03	0-0.1
Feb	0.02	0.18	0-0.57	0.03	0.15	0-0.44	0.06	0.17	0-0.49
Mar	0.21	0.47	0-1.26	0.15	0.34	0-0.93	0.24	0.40	0-1.01
Apr	0.02	0.18	0-0.59	0.06	0.21	0-0.6	0.12	0.26	0-0.67
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.03	0-0.11	0.00	0.02	0-0.08
Nov	0.00	0.07	0-0.27	0.00	0.09	0-0.3	0.00	0.07	0-0.24
Dec	0.00	0.04	0-0.18	0.00	0.04	0-0.16	0.00	0.03	0-0.11

Table 6.3a. Guillemot design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	960.67	1033.96	38.31-2118.14	1776.40	1872.73	83.64-3783.12	2356.47	2524.37	175.33-5018.67
Feb	300.24	300.37	187.31-456.37	510.64	526.00	368.62-733.23	805.90	822.40	604.2-1102.18
Mar	569.82	619.41	341.89-972.05	1123.13	1161.68	862.89-1530.31	2046.96	2135.67	1228.98-3166.89
Apr	2994.87	3041.03	908.43-5269.48	4023.57	4102.60	1353.71-6954.26	4620.23	4771.61	1653.84-8014.86
May	344.69	421.86	59.1-872.39	470.62	559.14	90.8-1123.89	586.09	663.22	140.43-1296.36
Jun	0.00	6.08	0-36.49	0.00	6.65	0-39.91	12.02	15.05	0-45.21
Jul	72.32	94.94	0-236.13	124.93	181.85	0-453.27	195.48	252.28	0-597.25
Aug	197.80	232.50	26.31-490.4	329.85	379.65	57.53-756.13	520.59	581.83	91.92-1161.66
Sep	30.58	41.59	0-112.13	64.85	69.58	12.97-155.96	128.89	129.87	60.39-210.91
Oct	145.30	155.05	77.71-268.25	205.54	208.80	123.33-330.56	308.69	309.06	216.85-418.94
Nov	618.67	717.24	56.71-1503.07	967.62	1093.07	313.27-1989.76	1327.90	1449.73	557.59-2465.32
Dec	1071.63	1059.38	648.62-1474.44	1838.77	1834.07	1158.77-2494.4	2634.50	2690.03	1624.27-3767.04

Table 6.3b. Guillemot design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	4.62	4.97	0.18-10.19	5.24	5.52	0.25-11.16	4.76	5.10	0.35-10.14
Feb	1.44	1.44	0.9-2.19	1.51	1.55	1.09-2.16	1.63	1.66	1.22-2.23
Mar	2.74	2.98	1.64-4.67	3.31	3.43	2.55-4.51	4.13	4.31	2.48-6.4
Apr	14.40	14.62	4.37-25.34	11.87	12.10	3.99-20.51	9.33	9.64	3.34-16.19
May	1.66	2.03	0.28-4.2	1.39	1.65	0.27-3.32	1.18	1.34	0.28-2.62
Jun	0.00	0.03	0-0.18	0.00	0.02	0-0.12	0.02	0.03	0-0.09
Jul	0.35	0.46	0-1.14	0.37	0.54	0-1.34	0.39	0.51	0-1.21
Aug	0.95	1.12	0.13-2.36	0.97	1.12	0.17-2.23	1.05	1.18	0.19-2.35
Sep	0.15	0.20	0-0.54	0.19	0.21	0.04-0.46	0.26	0.26	0.12-0.43
Oct	0.70	0.75	0.37-1.29	0.61	0.62	0.36-0.98	0.62	0.62	0.44-0.85
Nov	2.98	3.45	0.27-7.23	2.85	3.22	0.92-5.87	2.68	2.93	1.13-4.98
Dec	5.15	5.09	3.12-7.09	5.42	5.41	3.42-7.36	5.32	5.43	3.28-7.61

Table 7.1a. Sandwich Tern design-based abundance estimates of birds in flight and on sea.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Feb	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Apr	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
May	0	4.31	0-25.85	0	4.7	0-28.18	4.33	25.99	0-86.62
Jun	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Nov	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0
Dec	0	0.00	0-0	0	0.0	0-0	0.00	0.00	0-0

Table 7.1b. Sandwich Tern design-based density estimates of birds in flight and on sea.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Feb	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Apr	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
May	0	0.02	0-0.12	0	0.01	0-0.08	0.01	0.05	0-0.17
Jun	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Nov	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Dec	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0

Table 7.2a. Sandwich Tern design-based abundance estimates of birds in flight.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Feb	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Mar	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Apr	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
May	0	4.31	0-25.85	0	4.7	0-28.18	0	25.99	0-86.62
Jun	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Jul	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Aug	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Sep	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Oct	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Nov	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0
Dec	0	0.00	0-0	0	0.0	0-0	0	0.00	0-0

Table 7.2b. Sandwich Tern design-based density estimates of birds in flight.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0.02	0-0.12	0	0.01	0-0.08	0	0.05	0-0.17
Jun	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Sep	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0.00	0-0	0	0.00	0-0	0	0.00	0-0

Table 7.3a. Sandwich Tern design-based abundance estimates of birds on the sea surface.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 7.3b. Sandwich Tern design-based density estimates of birds on the sea surface.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 8.1a. Commic Tern design-based abundance estimates of birds in flight and on sea.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0.00	0.00	0-0	0.00	5.11	0-30.67	0.00	9.19	0-45.94
May	25.85	34.65	0-103.39	37.57	51.89	0-140.89	126.18	186.35	0-450.43
Jun	0.00	0.00	0-0	0.00	25.28	0-91	75.58	81.24	18.27-158.04
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	4.45	0-26.7
Aug	0.00	35.00	0-119.99	21.86	81.97	0-229.53	29.94	84.83	0-239.51
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 8.1b. Commic Tern design-based density estimates of birds in flight and on sea.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0.00	0.00	0-0	0.00	0.02	0-0.09	0.00	0.02	0-0.09
May	0.12	0.17	0-0.5	0.11	0.15	0-0.42	0.25	0.38	0-0.91
Jun	0.00	0.00	0-0	0.00	0.07	0-0.27	0.15	0.16	0.04-0.32
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.05
Aug	0.00	0.17	0-0.58	0.06	0.24	0-0.68	0.06	0.17	0-0.48
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 8.2a. Commic Tern design-based abundance estimates of birds in flight.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0.00	0.00	0-0	0.00	5.11	0-30.67	0.00	9.19	0-45.94
May	25.85	34.65	0-94.99	39.43	51.89	0-140.89	113.19	186.35	0-459.09
Jun	0.00	0.00	0-0	0.00	25.28	0-91	75.58	81.24	18.27-164.91
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	4.45	0-26.7
Aug	0.00	35.00	0-109.99	21.86	81.97	0-229.53	24.95	84.83	0-229.53
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 8.2b. Commic Tern design-based density estimates of birds in flight.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0.00	0.00	0-0	0.00	0.02	0-0.09	0.00	0.02	0-0.09
May	0.12	0.17	0-0.46	0.12	0.15	0-0.42	0.23	0.38	0-0.93
Jun	0.00	0.00	0-0	0.00	0.07	0-0.27	0.15	0.16	0.04-0.33
Jul	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.05
Aug	0.00	0.17	0-0.53	0.06	0.24	0-0.68	0.05	0.17	0-0.46
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 8.3a. Commic Tern design-based abundance estimates of birds on the sea surface.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 8.3b. Commic Tern design-based density estimates of birds on the sea surface.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 9.1a. Kittiwake design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	9.71	11.82	0-31.3	19.54	20.36	0-52.97	57.11	58.96	19.04-104.7
Feb	73.02	79.52	24.76-164.29	89.56	95.47	35.77-179.12	105.97	114.83	47.05-207.16
Mar	136.09	140.27	77.76-213.85	202.44	200.66	104.78-295.06	282.05	280.49	178.63-376.13
Apr	276.16	282.68	154.33-431.41	397.89	435.25	207.57-704.38	679.87	685.07	443.69-964.02
May	135.01	176.99	0-422.17	161.77	230.81	9.86-544.76	291.81	355.84	17.79-779.59
Jun	117.67	121.24	62.29-203.35	203.98	208.10	121.34-302.19	317.88	329.48	146.13-529.09
Jul	0.00	25.47	0-88.28	41.02	58.44	0-164.04	40.25	74.72	0-201.35
Aug	30.00	29.82	0-71.37	42.44	45.21	0-109.95	59.88	68.26	0-168.56
Sep	4.49	49.43	0-152.78	9.86	54.21	0-157.71	38.25	79.52	0-213.72
Oct	51.00	102.01	0-257.7	15.44	39.89	0-105.7	53.74	53.45	8.38-111.03
Nov	57.08	72.12	10.82-169.93	78.04	94.23	22.72-216.03	135.62	141.01	68.19-246.93
Dec	71.12	103.34	6.16-250.96	108.71	158.55	5.89-371.84	175.06	209.73	23.23-452.93

Table 9.1b. Kittiwake design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.05	0.06	0-0.15	0.06	0.06	0-0.16	0.12	0.12	0.04-0.21
Feb	0.35	0.38	0.12-0.79	0.26	0.28	0.11-0.53	0.21	0.23	0.1-0.42
Mar	0.65	0.67	0.37-1.03	0.60	0.59	0.31-0.87	0.57	0.57	0.36-0.76
Apr	1.33	1.36	0.74-2.07	1.17	1.28	0.61-2.08	1.37	1.38	0.9-1.95
May	0.65	0.85	0-2.03	0.48	0.68	0.03-1.61	0.59	0.72	0.04-1.57
Jun	0.57	0.58	0.3-0.98	0.60	0.61	0.36-0.89	0.64	0.67	0.3-1.07
Jul	0.00	0.12	0-0.42	0.12	0.17	0-0.48	0.08	0.15	0-0.41
Aug	0.14	0.14	0-0.34	0.13	0.13	0-0.32	0.12	0.14	0-0.34
Sep	0.02	0.24	0-0.73	0.03	0.16	0-0.47	0.08	0.16	0-0.43
Oct	0.25	0.49	0-1.24	0.05	0.12	0-0.31	0.11	0.11	0.02-0.22
Nov	0.27	0.35	0.05-0.82	0.23	0.28	0.07-0.64	0.27	0.28	0.14-0.5
Dec	0.34	0.50	0.03-1.21	0.32	0.47	0.02-1.1	0.35	0.42	0.05-0.91

Table 9.2a. Kittiwake design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	5.79	7.75	0-29.12	11.17	16.18	0-52.97	44.22	44.53	11.06-85.66
Feb	37.14	42.86	9.13-91.27	47.69	50.72	17.88-99.51	63.05	68.58	17.66-144.11
Mar	81.20	84.34	38.88-136.09	124.91	122.65	52.39-187.37	164.25	164.60	94.02-235.04
Apr	178.19	181.58	89.35-300.11	270.74	283.28	126.35-470.25	394.39	403.69	246.49-597.19
May	64.62	124.93	0-327.39	85.70	169.30	0-422.66	161.06	225.45	0-537.05
Jun	48.45	50.79	13.84-92.43	90.66	87.00	20.22-173.76	130.56	145.34	27.4-295.47
Jul	0.00	17.95	0-62.81	4.92	44.29	0-137.79	4.45	44.50	0-133.5
Aug	20.00	24.82	0-71.37	21.86	27.22	0-81.07	33.04	42.81	0-118.24
Sep	0.00	4.49	0-26.96	0.00	4.93	0-29.57	0.00	4.45	0-26.72
Oct	0.00	8.05	0-32.21	0.00	7.81	0-31.24	15.46	16.11	0-41.89
Nov	28.32	55.00	0-151.05	41.41	67.68	0-185.17	87.88	98.59	29.43-204.06
Dec	30.79	56.86	0-161.33	62.69	103.74	0-264.2	85.40	134.58	0-337.47

Table 9.2b. Kittiwake design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.03	0.04	0-0.14	0.03	0.05	0-0.16	0.09	0.09	0.02-0.17
Feb	0.18	0.21	0.04-0.44	0.14	0.15	0.05-0.29	0.13	0.14	0.04-0.29
Mar	0.39	0.41	0.19-0.65	0.37	0.36	0.15-0.55	0.33	0.33	0.19-0.47
Apr	0.86	0.87	0.43-1.44	0.80	0.84	0.37-1.39	0.80	0.82	0.5-1.21
May	0.31	0.60	0-1.57	0.25	0.50	0-1.25	0.33	0.46	0-1.08
Jun	0.23	0.24	0.07-0.44	0.27	0.26	0.06-0.51	0.26	0.29	0.06-0.6
Jul	0.00	0.09	0-0.3	0.01	0.13	0-0.41	0.01	0.09	0-0.27
Aug	0.10	0.12	0-0.34	0.06	0.08	0-0.24	0.07	0.09	0-0.24
Sep	0.00	0.02	0-0.13	0.00	0.01	0-0.09	0.00	0.01	0-0.05
Oct	0.00	0.04	0-0.15	0.00	0.02	0-0.09	0.03	0.03	0-0.08
Nov	0.14	0.26	0-0.73	0.12	0.20	0-0.55	0.18	0.20	0.06-0.41
Dec	0.15	0.27	0-0.78	0.18	0.31	0-0.78	0.17	0.27	0-0.68

Table 9.3a. Kittiwake design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	3.53	0-19.72	0.00	4.19	0-19.54	12.44	14.43	0-37.32
Feb	30.95	36.67	6.19-91.27	39.80	44.76	5.96-99.51	41.21	46.24	9.01-108.08
Mar	54.13	55.93	19.44-97.2	78.07	78.01	20.96-133.19	117.23	115.89	47.01-183.55
Apr	97.47	101.10	40.61-176.3	143.12	151.46	45.12-286.24	274.96	280.72	156.11-441
May	43.08	52.06	0-129.23	49.29	61.52	0-150.28	114.12	134.73	8.89-303.17
Jun	64.70	70.44	20.76-138.65	113.32	117.33	60.67-182	182.67	180.70	100.47-275.03
Jul	0.00	8.25	0-40.53	10.25	14.15	0-41.02	25.58	30.22	0-85.64
Aug	0.00	5.00	0-30	12.52	15.54	0-43.72	20.46	25.41	0-70.79
Sep	8.99	44.94	0-134.81	9.86	49.28	0-148.1	41.39	75.06	0-204.82
Oct	45.63	93.95	0-236.23	11.77	32.81	0-88.06	36.13	37.96	0-93.31
Nov	18.65	17.12	0-48.14	25.53	26.03	0-60.19	42.86	43.25	12.16-79.96
Dec	33.32	46.49	0-125.48	35.32	54.81	0-146.78	62.17	75.15	11.61-168.74

Table 9.3b. Kittiwake design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.02	0-0.09	0.00	0.01	0-0.06	0.03	0.03	0-0.08
Feb	0.15	0.18	0.03-0.44	0.12	0.13	0.02-0.29	0.08	0.09	0.02-0.22
Mar	0.26	0.27	0.09-0.47	0.23	0.23	0.06-0.39	0.24	0.23	0.09-0.37
Apr	0.47	0.49	0.2-0.85	0.42	0.45	0.13-0.84	0.56	0.57	0.32-0.89
May	0.21	0.25	0-0.62	0.15	0.18	0-0.44	0.23	0.27	0.02-0.61
Jun	0.31	0.34	0.1-0.67	0.33	0.35	0.18-0.54	0.37	0.36	0.2-0.56
Jul	0.00	0.04	0-0.19	0.03	0.04	0-0.12	0.05	0.06	0-0.17
Aug	0.00	0.02	0-0.14	0.04	0.05	0-0.13	0.04	0.05	0-0.14
Sep	0.04	0.22	0-0.65	0.03	0.15	0-0.44	0.08	0.15	0-0.41
Oct	0.22	0.45	0-1.14	0.03	0.10	0-0.26	0.07	0.08	0-0.19
Nov	0.09	0.08	0-0.23	0.08	0.08	0-0.18	0.09	0.09	0.02-0.16
Dec	0.16	0.22	0-0.6	0.10	0.16	0-0.43	0.13	0.15	0.02-0.34

Table 10.1a. Black-headed Gull design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	11.15	44.06	0-135.44	3.18	39.49	0-123.29
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0	4.72	0-28.32	0.00	25.72	0-92.58	4.97	34.95	0-114.46
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 10.1b. Black-headed Gull design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0.03	0.13	0-0.4	0.01	0.08	0-0.25
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0	0.02	0-0.14	0.00	0.08	0-0.27	0.01	0.07	0-0.23
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 10.2a. Black-headed Gull design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	4.35	41.61	0-130.55	7.88	37.06	0-116.76
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0	4.72	0-28.32	0.00	25.72	0-92.58	4.64	32.46	0-111.31
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 10.2b. Black-headed Gull design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0.01	0.12	0-0.39	0.02	0.07	0-0.24
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Nov	0	0.02	0-0.14	0.00	0.08	0-0.27	0.01	0.07	0-0.22
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 10.3a. Black-headed Gull design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	2.44	0-14.67	0	3.18	0-12.74
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0	0-0	0	0.00	0-0	0	3.73	0-14.92
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 10.3b. Black-headed Gull design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.01	0-0.04	0	0.01	0-0.03
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0	0-0	0	0.00	0-0	0	0.01	0-0.03
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 11.1a. Little Gull design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	2.90	0-18.5	0.00	2.79	0-17.69	0.00	3.22	0-17.94
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	19.23	0-75.03	0.42	25.97	0-92.86	0.00	22.97	0-82.7
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	50.75	88.32	0-224.47	72.28	120.44	0-294.29
Nov	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 11.1b. Little Gull design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.01	0-0.09	0.00	0.01	0-0.05	0.00	0.01	0-0.04
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	0.09	0-0.36	0.00	0.08	0-0.27	0.00	0.05	0-0.17
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0.15	0.26	0-0.66	0.15	0.24	0-0.59
Nov	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 11.2a. Little Gull design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	2.90	0-17.37	0.00	2.79	0-16.75	0.00	2.99	0-17.04
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	18.76	0-65.65	0.00	25.56	0-92.01	0.00	22.97	0-82.69
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	10.41	33.85	0-98.93	12.89	36.08	0-103.08
Nov	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 11.2b. Little Gull design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.01	0-0.08	0.00	0.01	0-0.05	0.00	0.01	0-0.03
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	0.09	0-0.32	0.00	0.08	0-0.27	0.00	0.05	0-0.17
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0.03	0.10	0-0.29	0.03	0.07	0-0.21
Nov	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 11.3a. Little Gull design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.56	0-3.39	0.00	0.47	0-2.82	0.00	0.45	0-1.82
Feb	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Mar	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Apr	0	0.47	0-2.83	0.00	0.42	0-2.49	0.00	0.24	0-1.42
May	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	26.02	55.29	0-143.11	47.05	83.55	0-211.94
Nov	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 11.3b. Little Gull design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0.02	0.00	0.00	0-0.01	0.0	0.00	0-0
Feb	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Mar	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Apr	0	0	0-0.01	0.00	0.00	0-0.01	0.0	0.00	0-0
May	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Jun	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Jul	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Aug	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Sep	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Oct	0	0	0-0	0.08	0.16	0-0.42	0.1	0.17	0-0.43
Nov	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0
Dec	0	0	0-0	0.00	0.00	0-0	0.0	0.00	0-0

Table 12.1a. Mediterranean Gull design-based abundance estimates of birds in flight and on sea.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	5.46	0-32.79	0	4.99	0-29.94
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 12.1b. Mediterranean Gull design-based density estimates of birds in flight and on sea.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.02	0-0.1	0	0.01	0-0.06
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 12.2a. Mediterranean Gull design-based abundance estimates of birds in flight.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	5.46	0-32.79	0	4.99	0-29.94
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 12.2b. Mediterranean Gull design-based density estimates of birds in flight.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Feb	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Mar	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Apr	0	0	0-0	0	0.00	0-0	0	0.00	0-0
May	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jun	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Jul	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Aug	0	0	0-0	0	0.02	0-0.1	0	0.01	0-0.06
Sep	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Oct	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Nov	0	0	0-0	0	0.00	0-0	0	0.00	0-0
Dec	0	0	0-0	0	0.00	0-0	0	0.00	0-0

Table 12.3a. Mediterranean Gull design-based abundance estimates of birds on the sea surface.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 12.3b. Mediterranean Gull design-based density estimates of birds on the sea surface.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0	0	0-0
Feb	0	0	0-0	0	0	0-0	0	0	0-0
Mar	0	0	0-0	0	0	0-0	0	0	0-0
Apr	0	0	0-0	0	0	0-0	0	0	0-0
May	0	0	0-0	0	0	0-0	0	0	0-0
Jun	0	0	0-0	0	0	0-0	0	0	0-0
Jul	0	0	0-0	0	0	0-0	0	0	0-0
Aug	0	0	0-0	0	0	0-0	0	0	0-0
Sep	0	0	0-0	0	0	0-0	0	0	0-0
Oct	0	0	0-0	0	0	0-0	0	0	0-0
Nov	0	0	0-0	0	0	0-0	0	0	0-0
Dec	0	0	0-0	0	0	0-0	0	0	0-0

Table 13.1a. Common Gull design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	6.36	0-30.1	0.00	6.51	0-27.89	14.77	15.97	0-47.59
Feb	0.00	18.57	0-61.89	2.98	17.88	0-59.62	2.94	20.60	0-64.76
Mar	0.00	8.12	0-33.09	0.00	13.28	0-47.38	0.00	13.04	0-47.02
Apr	0.00	0.00	0-0	0.00	5.20	0-30.84	0.00	9.19	0-45.94
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	4.49	0-26.92	0.00	9.84	0-49.21	0.00	9.46	0-45.62
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	5.08	12.95	0-40.18	3.55	10.32	0-35.79
Nov	9.44	9.29	0-28.32	10.29	14.85	0-41.15	11.41	13.94	1.22-42.07
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 13.1b. Common Gull design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.03	0-0.14	0.00	0.02	0-0.08	0.03	0.03	0-0.1
Feb	0.00	0.09	0-0.3	0.01	0.05	0-0.18	0.01	0.04	0-0.13
Mar	0.00	0.04	0-0.16	0.00	0.04	0-0.14	0.00	0.03	0-0.09
Apr	0.00	0.00	0-0	0.00	0.02	0-0.09	0.00	0.02	0-0.09
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.02	0-0.13	0.00	0.03	0-0.15	0.00	0.02	0-0.09
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.01	0.04	0-0.12	0.01	0.02	0-0.07
Nov	0.05	0.04	0-0.14	0.03	0.04	0-0.12	0.02	0.03	0-0.08
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 13.2a. Common Gull design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	5.79	0-28.95	0	5.58	0-27.91	12.91	15.51	0-47.59
Feb	0	15.47	0-55.7	0	14.90	0-53.65	0.00	17.66	0-58.87
Mar	0	2.71	0-16.24	0	5.20	0-20.82	0.00	5.13	0-20.53
Apr	0	0.00	0-0	0	5.11	0-30.67	0.00	9.19	0-45.94
May	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0	5.21	0-20.83	0.00	5.15	0-25.77
Nov	0	3.08	0-18.47	0	2.98	0-17.86	0.00	2.94	0-18.06
Dec	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0

Table 13.2b. Common Gull design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0.03	0-0.14	0	0.02	0-0.08	0.03	0.03	0-0.1
Feb	0	0.07	0-0.27	0	0.04	0-0.16	0.00	0.04	0-0.12
Mar	0	0.01	0-0.08	0	0.02	0-0.06	0.00	0.01	0-0.04
Apr	0	0.00	0-0	0	0.02	0-0.09	0.00	0.02	0-0.09
May	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Jun	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Jul	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Aug	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Sep	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0
Oct	0	0.00	0-0	0	0.02	0-0.06	0.00	0.01	0-0.05
Nov	0	0.01	0-0.09	0	0.01	0-0.05	0.00	0.01	0-0.04
Dec	0	0.00	0-0	0	0.00	0-0	0.00	0.00	0-0

Table 13.3a. Common Gull design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	1.16	0-6.93	0.00	0.93	0-5.56	0.00	0.93	0-3.73
Feb	0.00	3.09	0-18.57	0.00	2.98	0-17.88	0.00	2.94	0-17.66
Mar	0.00	5.41	0-24.04	0.00	7.81	0-31.77	0.00	8.11	0-31.62
Apr	0.00	0.00	0-0	0.00	0.09	0-0.51	0.00	0.09	0-0.56
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	4.49	0-28.36	0.00	9.84	0-49.21	0.00	10.02	0-44.5
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	3.87	8.22	0-21.29	2.75	5.49	0-13.89
Nov	4.49	6.96	0-28.32	5.28	11.87	0-51.44	3.25	11.36	0.71-47.8
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 13.3b. Common Gull design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.01	0-0.03	0.00	0.00	0-0.02	0.00	0.00	0-0.01
Feb	0.00	0.01	0-0.09	0.00	0.01	0-0.05	0.00	0.01	0-0.04
Mar	0.00	0.03	0-0.12	0.00	0.02	0-0.09	0.00	0.02	0-0.06
Apr	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.02	0-0.14	0.00	0.03	0-0.15	0.00	0.02	0-0.09
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Oct	0.00	0.00	0-0	0.01	0.02	0-0.06	0.01	0.01	0-0.03
Nov	0.02	0.03	0-0.14	0.02	0.04	0-0.15	0.01	0.02	0-0.1
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 14.1a. Lesser Black-backed Gull design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	6.19	7.66	0-27.38	5.96	7.96	0-29.85	11.77	15.02	0-48.32
Mar	5.41	7.57	0-29.16	5.20	8.71	0-33.17	10.60	10.32	0-29.74
Apr	0.00	0.00	0-0	0.00	0.00	0-0	0.00	5.63	0-30.67
May	0.00	0.00	0-0	0.00	4.93	0-29.57	8.66	8.78	0-26.68
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	37.39	41.13	9.35-80.76	49.21	50.24	10.25-102.55	102.09	103.87	37.12-195.81
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	17.97	26.34	0-80.88	33.86	38.04	0-98.57	47.57	56.02	6.63-139.22
Oct	11.42	40.98	0-114.21	46.52	57.53	0-146.66	83.79	82.08	25.14-143.13
Nov	0.00	4.57	0-21.52	13.58	13.74	0-35.06	17.69	17.38	2.67-46.4
Dec	0.00	0.00	0-0	0.00	2.94	0-17.66	0.00	2.90	0-17.42

Table 14.1b. Lesser Black-backed Gull design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.03	0.04	0-0.13	0.02	0.02	0-0.09	0.02	0.03	0-0.1
Mar	0.03	0.04	0-0.14	0.02	0.03	0-0.1	0.02	0.02	0-0.06
Apr	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.06
May	0.00	0.00	0-0	0.00	0.01	0-0.09	0.02	0.02	0-0.05
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.18	0.20	0.04-0.39	0.15	0.15	0.03-0.3	0.21	0.21	0.07-0.4
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.09	0.13	0-0.39	0.10	0.11	0-0.29	0.10	0.11	0.01-0.28
Oct	0.05	0.20	0-0.55	0.14	0.17	0-0.43	0.17	0.17	0.05-0.29
Nov	0.00	0.02	0-0.1	0.04	0.04	0-0.1	0.04	0.04	0.01-0.09
Dec	0.00	0.00	0-0	0.00	0.01	0-0.05	0.00	0.01	0-0.04

Table 14.2a. Lesser Black-backed Gull design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	4.56	0-27.38	0.00	4.98	0-29.85	0.00	9.01	0-45.04
Mar	0.00	2.71	0-16.24	0.00	2.60	0-15.61	0.00	5.13	0-25.66
Apr	0.00	0.00	0-0	0.00	0.00	0-0	0.00	4.59	0-27.56
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	4.33	0-25.99
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	8.97	9.16	0-28.04	10.25	15.18	0-51.27	27.84	32.10	0-83.52
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	1.67	4.47	0-21.83
Oct	0.00	0.00	0-0	0.00	7.81	0-31.24	0.00	7.73	0-30.92
Nov	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 14.2b. Lesser Black-backed Gull design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.02	0-0.13	0.00	0.01	0-0.09	0.00	0.02	0-0.09
Mar	0.00	0.01	0-0.08	0.00	0.01	0-0.05	0.00	0.01	0-0.05
Apr	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.06
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.05
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.04	0.04	0-0.13	0.03	0.04	0-0.15	0.06	0.06	0-0.17
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.04
Oct	0.00	0.00	0-0	0.00	0.02	0-0.09	0.00	0.02	0-0.06
Nov	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 14.3a. Lesser Black-backed Gull design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	3.09	0-18.57	0.00	2.98	0-17.88	5.89	6.02	0-17.66
Mar	0.00	4.86	0-29.16	0.00	5.24	0-33.17	3.06	6.49	0-29.74
Apr	0.00	0.00	0-0	0.00	0.00	0-0	0.00	1.56	0-6.22
May	0.00	0.00	0-0	0.00	4.93	0-29.57	0.00	4.45	0-26.68
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	28.04	31.97	0-71.78	30.76	35.07	0-78.74	62.30	67.32	9.28-169.1
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	17.97	26.34	0-80.88	33.86	38.04	0-98.57	44.53	51.55	0-124.67
Oct	14.11	40.32	0-111.56	37.22	49.71	0-126.58	75.41	74.71	25.14-126.24
Nov	0.00	4.60	0-21.52	14.33	13.85	0-37.44	17.69	18.00	1.44-46.38
Dec	0.00	0.00	0-0	0.00	2.94	0-17.66	0.00	2.90	0-17.42

Table 14.3b. Lesser Black-backed Gull design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.01	0-0.09	0.00	0.01	0-0.05	0.01	0.01	0-0.04
Mar	0.00	0.02	0-0.14	0.00	0.02	0-0.1	0.01	0.01	0-0.06
Apr	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0.01
May	0.00	0.00	0-0	0.00	0.01	0-0.09	0.00	0.01	0-0.05
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.13	0.15	0-0.35	0.09	0.10	0-0.23	0.13	0.14	0.02-0.34
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.09	0.13	0-0.39	0.10	0.11	0-0.29	0.09	0.10	0-0.25
Oct	0.07	0.19	0-0.54	0.11	0.15	0-0.37	0.15	0.15	0.05-0.25
Nov	0.00	0.02	0-0.1	0.04	0.04	0-0.11	0.04	0.04	0-0.09
Dec	0.00	0.00	0-0	0.00	0.01	0-0.05	0.00	0.01	0-0.04

Table 15.1a. Herring Gull design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	3.09	0-18.57	5.96	7.96	0-29.85	17.66	17.88	0-48
Mar	5.41	7.57	0-29.16	10.41	14.79	0-52.17	15.40	15.05	0-47.01
Apr	0.00	0.00	0-0	0.00	12.81	0-56.28	0.00	16.85	0-64.33
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	6.92	0-34.61	0.00	7.55	0-37.77	0.00	6.87	0-27.49
Jul	0.00	14.02	0-56.09	19.68	20.30	0-61.53	17.80	18.37	0-55.68
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	54.23	57.95	17.97-107.85	59.26	63.44	19.71-110.06	71.24	71.04	26.72-125.69
Oct	0.00	0.00	0-0	0.00	4.65	0-27.91	0.00	25.14	0-83.79
Nov	0.00	0.00	0-0	0.00	6.92	0-34.42	22.93	28.38	5.68-75.44
Dec	0.00	0.00	0-0	0.00	0.00	0-0	8.88	10.25	0-29.04

Table 15.1b. Herring Gull design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.01	0-0.09	0.02	0.02	0-0.09	0.04	0.04	0-0.1
Mar	0.03	0.04	0-0.14	0.03	0.04	0-0.15	0.03	0.03	0-0.09
Apr	0.00	0.00	0-0	0.00	0.04	0-0.17	0.00	0.03	0-0.13
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.03	0-0.17	0.00	0.02	0-0.11	0.00	0.01	0-0.06
Jul	0.00	0.07	0-0.27	0.06	0.06	0-0.18	0.04	0.04	0-0.11
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.26	0.28	0.09-0.52	0.17	0.19	0.06-0.32	0.14	0.14	0.05-0.25
Oct	0.00	0.00	0-0	0.00	0.01	0-0.08	0.00	0.05	0-0.17
Nov	0.00	0.00	0-0	0.00	0.02	0-0.1	0.05	0.06	0.01-0.15
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.02	0.02	0-0.06

Table 15.2a. Herring Gull design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Feb	0	0	0-0	0	0	0-0	0.00	4.50	0-27.02
Mar	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Apr	0	0	0-0	0	0	0-0	0.00	0.00	0-0
May	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Jun	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Jul	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Aug	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Sep	0	0	0-0	0	0	0-0	0.00	2.72	0-16.34
Oct	0	0	0-0	0	0	0-0	0.00	4.19	0-25.14
Nov	0	0	0-0	0	0	0-0	5.89	7.58	0-27.83
Dec	0	0	0-0	0	0	0-0	0.00	0.00	0-0

Table 15.2b. Herring Gull design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Feb	0	0	0-0	0	0	0-0	0.00	0.01	0-0.05
Mar	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Apr	0	0	0-0	0	0	0-0	0.00	0.00	0-0
May	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Jun	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Jul	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Aug	0	0	0-0	0	0	0-0	0.00	0.00	0-0
Sep	0	0	0-0	0	0	0-0	0.00	0.01	0-0.03
Oct	0	0	0-0	0	0	0-0	0.00	0.01	0-0.05
Nov	0	0	0-0	0	0	0-0	0.01	0.02	0-0.06
Dec	0	0	0-0	0	0	0-0	0.00	0.00	0-0

Table 15.3a. Herring Gull design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	3.09	0-18.57	5.96	7.96	0-29.85	11.77	11.89	0-35.98
Mar	5.41	7.57	0-29.16	10.41	13.08	0-52.39	15.40	17.10	0-47.01
Apr	0.00	0.00	0-0	0.00	12.81	0-51.22	0.00	18.38	0-67.38
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	6.92	0-27.69	0.00	7.55	0-30.22	0.00	6.87	0-34.36
Jul	0.00	14.02	0-56.09	19.68	20.30	0-61.53	17.80	18.37	0-55.68
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	54.23	57.95	17.97-100.72	59.26	63.44	19.71-110.27	68.85	69.42	26.72-122.39
Oct	0.00	0.00	0-0	0.00	4.65	0-27.91	0.00	20.95	0-75.41
Nov	0.00	0.00	0-0	0.00	6.92	0-34.42	14.53	21.51	4.26-64.93
Dec	0.00	0.00	0-0	0.00	0.00	0-0	8.88	10.25	0-29.04

Table 15.3b. Herring Gull design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Feb	0.00	0.01	0-0.09	0.02	0.02	0-0.09	0.02	0.02	0-0.07
Mar	0.03	0.04	0-0.14	0.03	0.04	0-0.15	0.03	0.03	0-0.09
Apr	0.00	0.00	0-0	0.00	0.04	0-0.15	0.00	0.04	0-0.14
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.03	0-0.13	0.00	0.02	0-0.09	0.00	0.01	0-0.07
Jul	0.00	0.07	0-0.27	0.06	0.06	0-0.18	0.04	0.04	0-0.11
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.26	0.28	0.09-0.48	0.17	0.19	0.06-0.33	0.14	0.14	0.05-0.25
Oct	0.00	0.00	0-0	0.00	0.01	0-0.08	0.00	0.04	0-0.15
Nov	0.00	0.00	0-0	0.00	0.02	0-0.1	0.03	0.04	0.01-0.13
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.02	0.02	0-0.06

Table 16.1a. Great Black-backed Gull design-based abundance estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	2.90	0-17.37	0.00	5.58	0-27.91	0.00	19.35	0-66.33
Feb	6.19	30.95	0-99.03	41.73	52.67	0-131.15	67.46	81.12	5.88-188.39
Mar	5.41	7.57	0-29.16	10.65	20.98	0-73.51	13.39	19.06	0-61.19
Apr	0.00	14.07	0-65.65	0.00	12.75	0-51.11	5.09	29.04	0-97.94
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	10.31	0-41.23
Jul	18.70	22.99	0-56.09	29.53	30.35	0-82.04	26.70	27.46	0-64.96
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	4.99	0-29.94
Sep	0.00	4.49	0-26.96	8.47	9.16	0-29.57	10.53	12.73	0-40.51
Oct	17.37	17.62	0-40.15	13.32	13.16	0-29.65	28.40	41.88	9.41-108.92
Nov	9.38	9.35	0-28.32	15.21	15.90	0-36.81	20.81	21.60	0-50.58
Dec	0.00	6.16	0-24.78	0.00	8.83	0-35.32	0.00	8.71	0-34.84

Table 16.1b. Great Black-backed Gull design-based density estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.01	0-0.08	0.00	0.02	0-0.08	0.00	0.04	0-0.13
Feb	0.03	0.15	0-0.48	0.12	0.16	0-0.39	0.14	0.16	0.01-0.38
Mar	0.03	0.04	0-0.14	0.03	0.06	0-0.22	0.03	0.04	0-0.12
Apr	0.00	0.07	0-0.32	0.00	0.04	0-0.15	0.01	0.06	0-0.2
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.02	0-0.08
Jul	0.09	0.11	0-0.27	0.09	0.09	0-0.24	0.05	0.06	0-0.13
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.06
Sep	0.00	0.02	0-0.13	0.02	0.03	0-0.09	0.02	0.03	0-0.08
Oct	0.08	0.08	0-0.19	0.04	0.04	0-0.09	0.06	0.08	0.02-0.22
Nov	0.05	0.04	0-0.14	0.04	0.05	0-0.11	0.04	0.04	0-0.1
Dec	0.00	0.03	0-0.12	0.00	0.03	0-0.1	0.00	0.02	0-0.07

Table 16.2a. Great Black-backed Gull design-based abundance estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	5.53	0-27.64
Feb	0.00	9.28	0-37.14	17.88	16.90	0-41.73	18.01	20.78	0-47.1
Mar	5.41	7.57	0-29.16	10.41	13.08	0-41.91	9.40	11.97	0-47.01
Apr	0.00	9.38	0-46.89	0.00	10.22	0-51.11	0.00	18.37	0-73.5
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	10.31	0-41.23
Jul	0.00	14.02	0-56.09	0.00	20.51	0-82.04	0.00	18.56	0-64.96
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	4.99	0-29.94
Sep	0.00	0.00	0-0	0.00	0.00	0-0	1.07	5.53	0-28.34
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	29.33	0-92.17
Nov	0.00	3.08	0-18.47	0.00	2.98	0-17.86	0.00	5.89	0-29.43
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 16.2b. Great Black-backed Gull design-based density estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.06
Feb	0.00	0.04	0-0.18	0.05	0.05	0-0.12	0.04	0.04	0-0.1
Mar	0.03	0.04	0-0.14	0.03	0.04	0-0.12	0.02	0.02	0-0.09
Apr	0.00	0.05	0-0.23	0.00	0.03	0-0.15	0.00	0.04	0-0.15
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.02	0-0.08
Jul	0.00	0.07	0-0.27	0.00	0.06	0-0.24	0.00	0.04	0-0.13
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.06
Sep	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.01	0-0.06
Oct	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.06	0-0.19
Nov	0.00	0.01	0-0.09	0.00	0.01	0-0.05	0.00	0.01	0-0.06
Dec	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0

Table 16.3a. Great Black-backed Gull design-based abundance estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Abundance								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	2.90	0-17.37	0.00	5.58	0-27.91	0.00	13.82	0-49.75
Feb	3.09	21.66	0-68.08	5.96	35.77	0-107.31	26.48	61.81	0-164.84
Mar	0.00	0.00	0-0	0.00	7.90	0-36.76	2.08	7.61	0-33.15
Apr	0.00	4.69	0-28.14	0.00	2.53	0-15.17	0.00	12.22	0-44.84
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	8.97	0-44.86	0.00	9.84	0-39.62	0.00	8.90	0-35.6
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	4.49	0-26.96	8.47	9.16	0-29.57	7.65	8.28	0-26.72
Oct	17.37	17.61	0-40.15	13.28	13.14	0-31.13	13.03	12.56	0-29.94
Nov	3.11	6.27	0-28.32	12.34	13.04	0-34.3	14.93	15.76	0-35.86
Dec	0.00	6.16	0-24.63	0.00	8.83	0-35.32	0.00	8.71	0-34.84

Table 16.3b. Great Black-backed Gull design-based density estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Month	Density								
	Wind farm			Wind farm & 2km buffer			Wind farm & 4km buffer		
	Median	Mean	Confidence interval	Median	Mean	Confidence interval	Median	Mean	Confidence interval
Jan	0.00	0.01	0-0.08	0.00	0.02	0-0.08	0.00	0.03	0-0.1
Feb	0.01	0.10	0-0.33	0.02	0.11	0-0.32	0.05	0.12	0-0.33
Mar	0.00	0.00	0-0	0.00	0.02	0-0.11	0.00	0.02	0-0.07
Apr	0.00	0.02	0-0.14	0.00	0.01	0-0.04	0.00	0.02	0-0.09
May	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jun	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Jul	0.00	0.04	0-0.22	0.00	0.03	0-0.12	0.00	0.02	0-0.07
Aug	0.00	0.00	0-0	0.00	0.00	0-0	0.00	0.00	0-0
Sep	0.00	0.02	0-0.13	0.02	0.03	0-0.09	0.02	0.02	0-0.05
Oct	0.08	0.08	0-0.19	0.04	0.04	0-0.09	0.03	0.03	0-0.06
Nov	0.01	0.03	0-0.14	0.04	0.04	0-0.1	0.03	0.03	0-0.07
Dec	0.00	0.03	0-0.12	0.00	0.03	0-0.1	0.00	0.02	0-0.07



East Anglia ONE North Wind Farm

Appendix 12.2

Ornithology Technical Appendix

Annex 2

Survey seabird density and abundance

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1 INTRODUCTION

1. This appendix provides tables of seabird density and abundance for each species recorded on East Anglia ONE North in each survey.
2. The tables provide density and abundance estimates for species recorded in each of the 24 months over which data was collected (September 2016 to August 2018).
3. A key to the table numbering is provided in Table A2. Tables are presented for all birds (on the sea and in flight), in flight, and on the sea, separately. Tables are presented with and without the inclusion of birds not identified to species level (e.g. large gulls, etc) and for guillemot and razorbill, with and without adjustment for availability bias to account for the estimated proportion of individuals underwater when images were captured. Methods for assigning unidentified records and adjustment for availability bias are provided in Technical Appendix 12.2.
4. For each month, the density (birds/km²) recorded in the surveyed area (i.e. the sum of all the image footprints) was multiplied up to the total area to obtain an abundance estimate, with the 95% confidence range derived from 1,000 nonparametric bootstrap samples. These were calculated separately for the wind farm, wind farm plus 2km buffer and wind farm plus 4km buffer.

Table A2. Key to species density and abundance tables.

Species	All birds				In Flight		On Sea			
	Positive ID only	Plus availability bias	Plus unidentified	Plus availability bias and unidentified	Positive ID only	Plus unidentified	Positive ID only	Plus availability bias	Plus unidentified	Plus availability bias and unidentified
Red-throated diver	1.1				1.2		1.3			
Fulmar	2.1				2.2		2.3			
Gannet	3.1				3.2		3.3			
Great skua	4.1				4.2		4.3			
Razorbill	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.10
Guillemot	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
Sandwich tern	7.1				7.2		7.3			
Commic tern	8.1				8.2		8.3			
Kittiwake	9.1		9.2		9.3	9.4	9.5		9.6	
Black-headed gull	10.1		10.2		10.3	10.4	10.5		10.6	
Little gull	11.1		11.2		11.3	11.4	11.5		11.6	
Mediterranean Gull	12.1		12.2		12.3					
Common gull	13.1		13.2		13.3	13.4	13.5		13.6	
Lesser black-backed gull	14.1		14.2		14.3	14.4	14.5		14.6	
Herring gull	15.1		15.2		15.3	15.4	15.5		15.6	
Great black-backed gull	16.1		16.2		16.3	16.4	16.5		16.6	

Table 1.1. Red-throated Diver design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	6.16	0-18.47	11.77	0-29.44	34.84	11.61-63.88	0.03	0-0.09	0.03	0-0.09	0.07	0.02-0.13
Jan-17	28.95	5.79-57.91	55.83	22.33-89.33	77.39	38.69-121.61	0.14	0.03-0.28	0.16	0.07-0.26	0.16	0.08-0.25
Feb-17	12.38	0-30.95	17.88	0-41.73	29.44	5.89-58.87	0.06	0-0.15	0.05	0-0.12	0.06	0.01-0.12
Mar-17	0.00	0-0	20.82	5.2-41.64	92.39	51.33-133.45	0.00	0-0	0.06	0.02-0.12	0.19	0.1-0.27
Apr-17	0.00	0-0	9.02	0-27.07	8.22	0-24.65	0.00	0-0	0.03	0-0.08	0.02	0-0.05
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	28.32	0-66.09	30.86	0-72.01	27.83	0-64.93	0.14	0-0.32	0.09	0-0.21	0.06	0-0.13
Dec-17	0.00	0-0	58.71	19.57-107.64	97.69	44.4-159.86	0.00	0-0	0.17	0.06-0.32	0.20	0.09-0.32
Jan-18	29.12	0-67.94	42.38	10.59-85.02	38.07	9.52-76.15	0.14	0-0.33	0.13	0.03-0.25	0.08	0.02-0.15
Feb-18	301.20	209.93-401.83	507.50	378.14-636.86	657.52	513.4-792.62	1.45	1.01-1.93	1.50	1.12-1.88	1.33	1.04-1.6
Mar-18	19.44	0-48.6	20.96	0-52.39	37.61	9.4-75.21	0.09	0-0.23	0.06	0-0.15	0.08	0.02-0.15
Apr-18	0.00	0-0	10.22	0-30.67	55.12	18.37-101.29	0.00	0-0	0.03	0-0.09	0.11	0.04-0.2
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 1.2. Red-throated Diver design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	9.13	0-27.38	9.95	0-29.85	9.01	0-27.02	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 1.3. Red-throated Diver design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	6.16	0-18.47	11.77	0-29.44	34.84	11.61-63.88	0.03	0-0.09	0.03	0-0.09	0.07	0.02-0.13
Jan-17	28.95	5.79-57.91	55.83	22.33-94.91	77.39	38.69-121.61	0.14	0.03-0.28	0.16	0.07-0.28	0.16	0.08-0.25
Feb-17	12.38	0-30.95	17.88	0-41.73	29.44	5.89-58.87	0.06	0-0.15	0.05	0-0.12	0.06	0.01-0.12
Mar-17	0.00	0-0	20.82	5.2-41.64	92.39	51.33-138.58	0.00	0-0	0.06	0.02-0.12	0.19	0.1-0.28
Apr-17	0.00	0-0	9.02	0-27.07	8.22	0-24.65	0.00	0-0	0.03	0-0.08	0.02	0-0.05
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	28.32	0-56.88	30.86	0-72.01	27.83	0-64.93	0.14	0-0.27	0.09	0-0.21	0.06	0-0.13
Dec-17	0.00	0-0	58.71	19.57-107.64	97.69	44.4-159.86	0.00	0-0	0.17	0.06-0.32	0.20	0.09-0.32
Jan-18	29.12	0-67.94	42.38	10.59-84.75	38.07	9.52-76.15	0.14	0-0.33	0.13	0.03-0.25	0.08	0.02-0.15
Feb-18	292.08	191.68-401.6	497.55	368.18-626.91	648.51	513.4-792.62	1.40	0.92-1.93	1.47	1.09-1.85	1.31	1.04-1.6
Mar-18	19.44	0-48.6	20.96	0-52.39	37.61	9.4-84.62	0.09	0-0.23	0.06	0-0.15	0.08	0.02-0.17
Apr-18	0.00	0-0	10.22	0-30.67	55.12	18.37-101.06	0.00	0-0	0.03	0-0.09	0.11	0.04-0.2
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 2.1. Fulmar design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	17.81	0-44.53	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Oct-16	859.01	740.9-977.12	1322.59	1192.29-1468.52	1468.94	1324.49-1623.69	4.13	3.56-4.7	3.90	3.52-4.33	2.97	2.67-3.28
Nov-16	73.88	36.94-123.14	119.04	71.42-172.61	123.60	76.51-182.46	0.36	0.18-0.59	0.35	0.21-0.51	0.25	0.15-0.37
Dec-16	36.94	12.31-67.73	41.21	17.52-76.54	69.69	29.04-116.14	0.18	0.06-0.33	0.12	0.05-0.23	0.14	0.06-0.23
Jan-17	0.00	0-0	0.00	0-0	22.11	5.53-44.22	0.00	0-0	0.00	0-0	0.04	0.01-0.09
Feb-17	49.52	18.57-92.84	125.19	77.5-178.85	158.95	105.97-223.71	0.24	0.09-0.45	0.37	0.23-0.53	0.32	0.21-0.45
Mar-17	37.89	10.83-64.96	78.07	41.64-114.63	97.52	56.46-138.58	0.18	0.05-0.31	0.23	0.12-0.34	0.20	0.11-0.28
Apr-17	16.24	0-40.61	27.07	0-63.17	41.08	8.22-82.16	0.08	0-0.2	0.08	0-0.19	0.08	0.02-0.17
May-17	0.00	0-0	59.15	19.72-108.44	53.36	8.89-98.06	0.00	0-0	0.17	0.06-0.32	0.11	0.02-0.2
Jun-17	18.49	0-46.22	30.33	0-70.78	45.67	9.13-91.33	0.09	0-0.22	0.09	0-0.21	0.09	0.02-0.18
Jul-17	44.86	8.97-89.73	98.42	39.37-167.32	258.11	168.88-356.01	0.22	0.04-0.43	0.29	0.12-0.49	0.52	0.34-0.72
Aug-17	63.44	23.79-111.02	104.44	43.52-165.37	110.36	55.18-173.42	0.31	0.11-0.53	0.31	0.13-0.49	0.22	0.11-0.35
Sep-17	23.24	0-54.23	50.80	16.93-93.13	53.55	22.76-99.44	0.11	0-0.26	0.15	0.05-0.27	0.11	0.05-0.2
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	84.97	37.76-151.05	133.73	61.72-206	176.23	111.31-259.71	0.41	0.18-0.73	0.39	0.18-0.61	0.36	0.22-0.52
Dec-17	17.93	0-44.81	19.57	0-48.93	26.64	0-62.17	0.09	0-0.22	0.06	0-0.14	0.05	0-0.13
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	9.13	0-27.38	9.95	0-29.85	27.02	0-63.05	0.04	0-0.13	0.03	0-0.09	0.05	0-0.13
Mar-18	9.72	0-29.16	20.96	0-52.39	47.01	9.4-94.02	0.05	0-0.14	0.06	0-0.15	0.09	0.02-0.19
Apr-18	18.76	0-46.89	20.45	0-51.11	45.94	9.19-91.87	0.09	0-0.23	0.06	0-0.15	0.09	0.02-0.19
May-18	0.00	0-0	9.39	0-28.18	17.32	0-43.31	0.00	0-0	0.03	0-0.08	0.03	0-0.09

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jun-18	41.53	13.84-76.14	45.33	15.11-83.1	61.84	27.49-103.07	0.20	0.07-0.37	0.13	0.04-0.25	0.12	0.06-0.21
Jul-18	37.39	9.35-74.78	41.02	10.25-82.04	92.80	37.12-148.72	0.18	0.04-0.36	0.12	0.03-0.24	0.19	0.07-0.3
Aug-18	0.00	0-0	0.00	0-0	19.96	0-49.9	0.00	0-0	0.00	0-0	0.04	0-0.1

Table 2.2. Fulmar design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	134.22	85.9-187.91	364.49	291.6-447.81	371.10	293.79-453.57	0.65	0.41-0.9	1.08	0.86-1.32	0.75	0.59-0.92
Nov-16	18.47	0-37.1	53.57	23.81-95.23	58.86	23.54-94.17	0.09	0-0.18	0.16	0.07-0.28	0.12	0.05-0.19
Dec-16	6.16	0-18.47	5.89	0-17.66	11.61	0-29.04	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Jan-17	0.00	0-0	0.00	0-0	22.11	5.53-44.22	0.00	0-0	0.00	0-0	0.04	0.01-0.09
Feb-17	18.57	0-43.33	77.50	35.77-125.19	100.08	58.87-153.06	0.09	0-0.21	0.23	0.11-0.37	0.20	0.12-0.31
Mar-17	27.07	5.41-48.72	41.64	15.61-72.87	56.46	25.66-92.39	0.13	0.03-0.23	0.12	0.05-0.21	0.11	0.05-0.19
Apr-17	8.12	0-24.37	18.05	0-45.12	24.65	0-57.52	0.04	0-0.12	0.05	0-0.13	0.05	0-0.12
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	8.97	0-26.92	29.53	0-68.9	62.30	26.7-115.7	0.04	0-0.13	0.09	0-0.2	0.13	0.05-0.23
Aug-17	15.86	0-39.65	17.41	0-43.52	31.53	7.88-63.06	0.08	0-0.19	0.05	0-0.13	0.06	0.02-0.13
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-28.32	41.15	10.29-82.3	55.65	18.55-102.03	0.05	0-0.14	0.12	0.03-0.24	0.11	0.04-0.21
Dec-17	8.96	0-26.89	9.79	0-29.36	17.76	0-44.4	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	9.13	0-27.38	9.95	0-29.85	18.01	0-45.04	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Mar-18	9.72	0-29.16	20.96	0-52.39	47.01	9.4-94.02	0.05	0-0.14	0.06	0-0.15	0.09	0.02-0.19
Apr-18	9.38	0-28.14	10.22	0-30.67	27.56	0-64.31	0.05	0-0.14	0.03	0-0.09	0.06	0-0.13
May-18	0.00	0-0	9.39	0-28.18	8.66	0-25.99	0.00	0-0	0.03	0-0.08	0.02	0-0.05
Jun-18	20.76	0-48.45	22.66	0-52.88	20.61	0-48.1	0.10	0-0.23	0.07	0-0.16	0.04	0-0.1

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	18.56	0-46.4	0.00	0-0	0.00	0-0	0.04	0-0.09
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 2.3. Fulmar design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	17.81	0-44.53	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Oct-16	724.79	617.41-832.17	958.10	833.13-1088.28	1097.84	963.83-1237	3.49	2.97-4	2.83	2.46-3.21	2.22	1.95-2.5
Nov-16	55.41	24.63-98.51	65.47	29.76-101.19	64.74	29.43-111.83	0.27	0.12-0.47	0.19	0.09-0.3	0.13	0.06-0.23
Dec-16	30.79	6.16-61.57	35.32	11.77-64.76	58.07	29.04-98.72	0.15	0.03-0.3	0.10	0.03-0.19	0.12	0.06-0.2
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	30.95	6.19-61.89	47.69	17.88-83.46	58.87	29.29-100.08	0.15	0.03-0.3	0.14	0.05-0.25	0.12	0.06-0.2
Mar-17	10.83	0-27.07	36.43	15.48-67.66	41.06	15.4-71.86	0.05	0-0.13	0.11	0.05-0.2	0.08	0.03-0.15
Apr-17	8.12	0-24.37	9.02	0-27.3	16.43	0-41.08	0.04	0-0.12	0.03	0-0.08	0.03	0-0.08
May-17	0.00	0-0	59.15	19.72-108.44	53.36	17.79-97.83	0.00	0-0	0.17	0.06-0.32	0.11	0.04-0.2
Jun-17	18.49	0-46.22	30.33	0-70.78	45.67	9.13-91.33	0.09	0-0.22	0.09	0-0.21	0.09	0.02-0.18
Jul-17	35.89	8.97-71.78	68.90	19.68-127.95	195.81	115.7-275.91	0.17	0.04-0.35	0.20	0.06-0.38	0.40	0.23-0.56
Aug-17	47.58	15.86-87.23	87.04	43.52-147.96	78.83	39.41-134.01	0.23	0.08-0.42	0.26	0.13-0.44	0.16	0.08-0.27
Sep-17	23.24	0-54.23	50.80	16.93-93.13	53.55	22.76-99.44	0.11	0-0.26	0.15	0.05-0.27	0.11	0.05-0.2
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	75.53	28.32-132.17	92.58	40.89-154.31	120.58	64.93-185.51	0.36	0.14-0.64	0.27	0.12-0.46	0.24	0.13-0.37
Dec-17	8.96	0-26.89	9.79	0-29.36	8.88	0-26.64	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	9.01	0-27.02	0.00	0-0	0.00	0-0	0.02	0-0.05
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	9.38	0-28.14	10.22	0-30.67	18.37	0-45.94	0.05	0-0.14	0.03	0-0.09	0.04	0-0.09
May-18	0.00	0-0	0.00	0-0	8.66	0-25.99	0.00	0-0	0.00	0-0	0.02	0-0.05
Jun-18	20.76	0-48.45	22.66	0-52.88	41.23	13.74-75.58	0.10	0-0.23	0.07	0-0.16	0.08	0.03-0.15

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	37.39	9.35-74.78	41.02	10.25-82.04	74.24	27.84-129.93	0.18	0.04-0.36	0.12	0.03-0.24	0.15	0.06-0.26
Aug-18	0.00	0-0	0.00	0-0	19.96	0-49.9	0.00	0-0	0.00	0-0	0.04	0-0.1

Table 3.1. Gannet design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	98.86	44.94-161.77	157.71	88.71-236.57	249.34	168.97-347.3	0.48	0.22-0.78	0.47	0.26-0.7	0.50	0.34-0.7
Oct-16	102.01	59.06-150.33	140.59	88.52-192.66	185.55	134.01-247.4	0.49	0.28-0.72	0.41	0.26-0.57	0.37	0.27-0.5
Nov-16	98.51	55.41-147.77	214.27	148.8-285.85	435.54	341.37-535.6	0.47	0.27-0.71	0.63	0.44-0.84	0.88	0.69-1.08
Dec-16	12.31	0-30.79	11.77	0-29.44	23.23	5.81-46.46	0.06	0-0.15	0.03	0-0.09	0.05	0.01-0.09
Jan-17	5.79	0-17.37	5.58	0-16.75	5.53	0-16.72	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Feb-17	6.19	0-18.57	5.96	0-17.88	35.32	11.77-64.76	0.03	0-0.09	0.02	0-0.05	0.07	0.02-0.13
Mar-17	16.24	0-37.89	36.43	10.41-67.66	61.59	30.8-97.52	0.08	0-0.18	0.11	0.03-0.2	0.12	0.06-0.2
Apr-17	8.12	0-24.37	18.05	0-45.12	16.43	0-41.08	0.04	0-0.12	0.05	0-0.13	0.03	0-0.08
May-17	8.98	0-26.95	29.57	0-69.01	35.58	8.89-71.15	0.04	0-0.13	0.09	0-0.2	0.07	0.02-0.14
Jun-17	27.73	0-64.7	40.45	10.11-80.89	54.80	18.27-109.6	0.13	0-0.31	0.12	0.03-0.24	0.11	0.04-0.22
Jul-17	35.89	8.97-71.78	59.05	19.68-108.27	124.60	62.3-195.81	0.17	0.04-0.35	0.17	0.06-0.32	0.25	0.13-0.4
Aug-17	79.30	39.65-127.08	147.96	87.04-226.29	173.42	110.36-244.36	0.38	0.19-0.61	0.44	0.26-0.67	0.35	0.22-0.49
Sep-17	30.99	7.75-61.98	67.73	25.4-118.53	160.64	99.44-229.49	0.15	0.04-0.3	0.20	0.07-0.35	0.32	0.2-0.46
Oct-17	59.46	25.48-101.93	130.27	65.13-195.4	251.36	175.95-343.53	0.29	0.12-0.49	0.38	0.19-0.58	0.51	0.36-0.69
Nov-17	434.27	330.43-547.56	720.10	565.8-894.99	983.20	816.01-1168.71	2.09	1.59-2.63	2.12	1.67-2.64	1.99	1.65-2.36
Dec-17	0.00	0-0	0.00	0-0	17.76	0-44.4	0.00	0-0	0.00	0-0	0.04	0-0.09
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	18.25	0-45.64	29.85	0-59.71	27.02	0-54.04	0.09	0-0.22	0.09	0-0.18	0.05	0-0.11
Mar-18	48.60	9.72-97.2	52.39	10.48-104.78	75.21	28.21-131.62	0.23	0.05-0.47	0.15	0.03-0.31	0.15	0.06-0.27
Apr-18	131.30	75.03-206.32	184.01	102.23-265.8	257.25	174.56-340.17	0.63	0.36-0.99	0.54	0.3-0.78	0.52	0.35-0.69
May-18	25.85	0-60.31	28.18	0-65.75	34.65	8.66-69.3	0.12	0-0.29	0.08	0-0.19	0.07	0.02-0.14
Jun-18	27.69	6.92-55.37	30.22	7.55-60.44	89.33	41.23-137.43	0.13	0.03-0.27	0.09	0.02-0.18	0.18	0.08-0.28

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	74.78	28.04-121.52	92.29	40.76-164.08	92.80	46.4-148.49	0.36	0.13-0.58	0.27	0.12-0.48	0.19	0.09-0.3
Aug-18	0.00	0-0	0.00	0-0	19.96	0-49.9	0.00	0-0	0.00	0-0	0.04	0-0.1

Table 3.2. Gannet design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	39.43	9.86-79.1	89.05	35.62-142.48	0.00	0-0	0.12	0.03-0.23	0.18	0.07-0.29
Oct-16	16.11	0-37.58	41.66	15.62-72.9	56.70	25.77-92.77	0.08	0-0.18	0.12	0.05-0.22	0.11	0.05-0.19
Nov-16	43.10	18.32-73.88	130.95	77.38-190.47	247.20	176.57-323.71	0.21	0.09-0.36	0.39	0.23-0.56	0.50	0.36-0.65
Dec-16	12.31	0-30.79	11.77	0-29.44	17.42	0-40.65	0.06	0-0.15	0.03	0-0.09	0.04	0-0.08
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	35.32	11.77-64.76	0.03	0-0.09	0.02	0-0.05	0.07	0.02-0.13
Mar-17	5.41	0-16.24	15.61	0-36.43	30.80	10.27-56.46	0.03	0-0.08	0.05	0-0.11	0.06	0.02-0.11
Apr-17	8.12	0-24.37	18.05	0-45.12	16.43	0-41.08	0.04	0-0.12	0.05	0-0.13	0.03	0-0.08
May-17	0.00	0-0	9.86	0-29.57	17.79	0-44.47	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Jun-17	18.49	0-46.22	20.22	0-50.56	18.27	0-45.67	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Jul-17	26.92	0-62.81	39.37	9.84-78.74	62.30	17.8-115.7	0.13	0-0.3	0.12	0.03-0.23	0.13	0.04-0.23
Aug-17	55.51	15.86-95.16	95.74	43.52-147.96	110.36	55.18-173.42	0.27	0.08-0.46	0.28	0.13-0.44	0.22	0.11-0.35
Sep-17	15.49	0-38.74	25.40	0-50.8	99.44	53.55-160.64	0.07	0-0.19	0.07	0-0.15	0.20	0.11-0.32
Oct-17	59.46	16.99-110.43	111.66	46.52-176.79	192.71	125.68-268.12	0.29	0.08-0.53	0.33	0.14-0.52	0.39	0.25-0.54
Nov-17	236.02	151.05-330.43	360.05	256.92-473.21	454.50	333.92-566.04	1.13	0.73-1.59	1.06	0.76-1.4	0.92	0.67-1.14
Dec-17	0.00	0-0	0.00	0-0	8.88	0-26.64	0.00	0-0	0.00	0-0	0.02	0-0.05
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	18.25	0-45.64	29.85	0-69.66	27.02	0-63.05	0.09	0-0.22	0.09	0-0.21	0.05	0-0.13
Mar-18	48.60	9.72-97.2	52.39	10.48-94.56	75.21	28.21-131.62	0.23	0.05-0.47	0.15	0.03-0.28	0.15	0.06-0.27
Apr-18	84.41	37.51-140.68	132.90	71.56-204.46	183.75	110.25-257.25	0.41	0.18-0.68	0.39	0.21-0.6	0.37	0.22-0.52
May-18	0.00	0-0	0.00	0-0	8.66	0-25.99	0.00	0-0	0.00	0-0	0.02	0-0.05
Jun-18	6.92	0-20.76	7.55	0-22.66	41.23	13.74-75.58	0.03	0-0.1	0.02	0-0.07	0.08	0.03-0.15

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	37.39	9.35-75.02	41.02	10.25-82.04	37.12	9.28-74.24	0.18	0.04-0.36	0.12	0.03-0.24	0.07	0.02-0.15
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 3.3. Gannet design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	98.86	44.94-161.77	118.28	59.14-187.28	160.29	97.96-240.44	0.48	0.22-0.78	0.35	0.17-0.55	0.32	0.2-0.49
Oct-16	85.90	48.32-128.99	98.93	57.28-140.59	128.85	82.47-185.55	0.41	0.23-0.62	0.29	0.17-0.41	0.26	0.17-0.37
Nov-16	55.41	24.63-92.36	83.33	47.62-130.95	188.34	123.6-253.09	0.27	0.12-0.44	0.25	0.14-0.39	0.38	0.25-0.51
Dec-16	0.00	0-0	0.00	0-0	5.81	0-17.42	0.00	0-0	0.00	0-0	0.01	0-0.04
Jan-17	5.79	0-17.37	5.58	0-16.75	5.53	0-16.58	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	10.83	0-27.07	20.82	5.2-41.64	30.80	10.27-61.59	0.05	0-0.13	0.06	0.02-0.12	0.06	0.02-0.12
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	8.98	0-26.95	19.72	0-49.29	17.79	0-44.47	0.04	0-0.13	0.06	0-0.15	0.04	0-0.09
Jun-17	9.24	0-27.73	20.22	0-50.56	36.53	9.13-73.3	0.04	0-0.13	0.06	0-0.15	0.07	0.02-0.15
Jul-17	8.97	0-26.92	19.68	0-49.21	62.30	17.8-115.7	0.04	0-0.13	0.06	0-0.15	0.13	0.04-0.23
Aug-17	23.79	0-55.51	52.22	17.41-95.74	63.06	23.65-110.36	0.11	0-0.27	0.15	0.05-0.28	0.13	0.05-0.22
Sep-17	15.49	0-38.74	42.33	8.47-84.66	61.20	22.95-99.64	0.07	0-0.19	0.12	0.02-0.25	0.12	0.05-0.2
Oct-17	0.00	0-0	18.61	0-46.52	50.27	16.76-92.17	0.00	0-0	0.05	0-0.14	0.10	0.03-0.19
Nov-17	198.26	122.73-283.22	360.05	246.89-483.5	528.70	398.85-667.83	0.95	0.59-1.36	1.06	0.73-1.43	1.07	0.81-1.35
Dec-17	0.00	0-0	0.00	0-0	8.88	0-26.64	0.00	0-0	0.00	0-0	0.02	0-0.05
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	46.89	9.38-93.78	51.11	10.22-102.23	73.50	27.56-128.62	0.23	0.05-0.45	0.15	0.03-0.3	0.15	0.06-0.26
May-18	25.85	0-60.31	28.18	0-56.59	25.99	0-60.63	0.12	0-0.29	0.08	0-0.17	0.05	0-0.12
Jun-18	20.76	0-48.45	22.66	0-45.33	48.10	13.74-89.33	0.10	0-0.23	0.07	0-0.13	0.10	0.03-0.18

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	37.39	9.35-74.78	51.27	10.25-92.29	55.68	18.56-102.09	0.18	0.04-0.36	0.15	0.03-0.27	0.11	0.04-0.21
Aug-18	0.00	0-0	0.00	0-0	19.96	0-49.9	0.00	0-0	0.00	0-0	0.04	0-0.1

Table 4.1. Great Skua design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jul-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Sep-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-17	0	0-0	9.3	0-37.22	16.76	0-41.89	0	0-0	0.03	0-0.11	0.03	0-0.08
Nov-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

Table 4.2. Great Skua design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-16	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jul-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Sep-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-17	0	0-0	9.3	0-27.91	16.76	0-41.89	0	0-0	0.03	0-0.08	0.03	0-0.08
Nov-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-17	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-18	0	0-0	0.0	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

Table 4.3. Great Skua design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jul-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Sep-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

Table 5.1. Razorbill design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	10.41	0-26.04	25.77	5.15-51.54	0.00	0-0	0.03	0-0.08	0.05	0.01-0.1
Nov-16	24.63	6.16-49.26	47.62	17.86-83.33	58.86	23.54-94.17	0.12	0.03-0.24	0.14	0.05-0.25	0.12	0.05-0.19
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	110.02	63.7-162.14	206.57	139.57-279.14	259.80	187.94-337.18	0.53	0.31-0.78	0.61	0.41-0.82	0.52	0.38-0.68
Feb-17	55.70	18.57-92.84	89.42	47.69-137.12	111.85	64.76-170.73	0.27	0.09-0.45	0.26	0.14-0.4	0.23	0.13-0.34
Mar-17	70.37	32.48-108.27	124.91	78.07-176.96	189.91	133.45-246.37	0.34	0.16-0.52	0.37	0.23-0.52	0.38	0.27-0.5
Apr-17	56.86	16.24-97.47	108.30	54.15-171.47	180.76	114.83-262.93	0.27	0.08-0.47	0.32	0.16-0.51	0.37	0.23-0.53
May-17	17.97	0-44.92	19.72	0-49.29	62.26	17.79-106.73	0.09	0-0.22	0.06	0-0.15	0.13	0.04-0.22
Jun-17	9.24	0-27.73	10.11	0-30.33	18.27	0-45.67	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Jul-17	17.95	0-44.86	19.68	0-49.21	53.40	17.8-97.9	0.09	0-0.22	0.06	0-0.15	0.11	0.04-0.2
Aug-17	47.58	15.86-87.23	69.63	26.11-121.85	126.12	70.94-189.18	0.23	0.08-0.42	0.21	0.08-0.36	0.25	0.14-0.38
Sep-17	15.49	0-38.74	25.40	0-59.26	53.55	15.3-99.44	0.07	0-0.19	0.07	0-0.17	0.11	0.03-0.2
Oct-17	33.98	0-76.45	46.52	9.3-93.05	92.17	41.89-150.82	0.16	0-0.37	0.14	0.03-0.27	0.19	0.08-0.3
Nov-17	37.76	9.44-75.53	41.15	10.29-82.3	129.86	64.93-213.34	0.18	0.05-0.36	0.12	0.03-0.24	0.26	0.13-0.43
Dec-17	26.89	0-62.74	48.93	9.79-97.85	44.40	8.88-88.81	0.13	0-0.3	0.14	0.03-0.29	0.09	0.02-0.18
Jan-18	9.71	0-29.12	10.59	0-31.78	9.52	0-38.07	0.05	0-0.14	0.03	0-0.09	0.02	0-0.08
Feb-18	54.76	18.25-100.4	69.66	19.9-119.41	144.11	81.06-216.17	0.26	0.09-0.48	0.21	0.06-0.35	0.29	0.16-0.44
Mar-18	184.69	106.93-262.45	220.03	125.73-314.33	216.24	131.62-310.26	0.89	0.51-1.26	0.65	0.37-0.93	0.44	0.27-0.63
Apr-18	328.24	215.7-440.78	562.26	429.36-705.38	523.69	395.06-652.31	1.58	1.04-2.12	1.66	1.27-2.08	1.06	0.8-1.32
May-18	8.62	0-25.85	18.78	0-46.96	25.99	0-60.63	0.04	0-0.12	0.06	0-0.14	0.05	0-0.12
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	18.56	0-46.4	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Aug-18	10.00	0-30	10.93	0-32.79	29.94	0-69.86	0.05	0-0.14	0.03	0-0.1	0.06	0-0.14

Table 5.2. Razorbill design based estimates of birds in flight and on sea and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	12.55	0-31.37	31.05	6.21-62.1	0.00	0-0	0.04	0-0.09	0.06	0.01-0.13
Nov-16	29.67	7.42-59.38	57.37	21.51-100.4	70.91	28.36-114.67	0.14	0.04-0.29	0.17	0.06-0.3	0.14	0.06-0.23
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	132.56	77.93-196.53	248.87	169.3-335.17	313.01	226.43-406.25	0.64	0.37-0.95	0.73	0.5-0.99	0.63	0.46-0.82
Feb-17	67.11	23.64-111.86	107.74	57.46-163.98	134.76	78.02-204.49	0.32	0.11-0.54	0.32	0.17-0.48	0.27	0.16-0.41
Mar-17	84.79	40.21-130.44	150.50	94.06-213.21	228.81	160.78-298.93	0.41	0.19-0.63	0.44	0.28-0.63	0.46	0.32-0.6
Apr-17	68.50	19.57-119.1	130.48	65.24-206.59	217.79	136.7-315.1	0.33	0.09-0.57	0.38	0.19-0.61	0.44	0.28-0.64
May-17	21.65	0-54.12	23.75	0-59.39	75.01	21.43-128.59	0.10	0-0.26	0.07	0-0.18	0.15	0.04-0.26
Jun-17	11.14	0-33.41	12.18	0-36.55	22.01	0-55.02	0.05	0-0.16	0.04	0-0.11	0.04	0-0.11
Jul-17	21.62	0-54.05	23.72	0-59.29	64.34	21.45-117.96	0.10	0-0.26	0.07	0-0.17	0.13	0.04-0.24
Aug-17	57.32	19.11-105.09	83.89	31.46-146.81	151.96	85.47-227.93	0.28	0.09-0.51	0.25	0.09-0.43	0.31	0.17-0.46
Sep-17	18.67	0-46.67	30.60	0-71.4	64.51	18.43-118.25	0.09	0-0.22	0.09	0-0.21	0.13	0.04-0.24
Oct-17	40.94	1.74-90.37	56.05	11.21-112.11	111.04	50.47-181.75	0.20	0.01-0.43	0.17	0.03-0.33	0.22	0.1-0.37
Nov-17	45.50	11.37-91	49.58	12.39-99.15	156.45	78.23-255.13	0.22	0.05-0.44	0.15	0.04-0.29	0.32	0.16-0.52
Dec-17	32.40	0-75.59	58.95	11.79-117.89	53.50	10.7-107	0.16	0-0.36	0.17	0.03-0.35	0.11	0.02-0.22
Jan-18	11.69	0-35.08	12.76	0-38.29	11.47	0-43.92	0.06	0-0.17	0.04	0-0.11	0.02	0-0.09
Feb-18	65.98	21.99-120.97	83.92	26.02-143.87	171.79	97.62-258.6	0.32	0.11-0.58	0.25	0.08-0.42	0.35	0.2-0.52
Mar-18	222.52	128.83-318.2	262.95	151.49-374.42	256.68	154.73-368.03	1.07	0.62-1.53	0.78	0.45-1.1	0.52	0.31-0.74
Apr-18	395.47	263.72-529.14	677.42	517.3-849.86	630.95	475.98-785.92	1.90	1.27-2.54	2.00	1.53-2.51	1.27	0.96-1.59
May-18	10.38	0-31.14	22.63	0-56.58	31.31	0-71.28	0.05	0-0.15	0.07	0-0.17	0.06	0-0.14
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	12.36	0-37.07	22.36	0-55.91	0.00	0-0	0.04	0-0.11	0.05	0-0.11
Aug-18	12.05	0-36.14	13.17	0-39.51	36.07	0-84.17	0.06	0-0.17	0.04	0-0.12	0.07	0-0.17

Table 5.3. Razorbill design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	10.41	0-26.04	25.77	5.15-51.54	0.00	0-0	0.03	0-0.08	0.05	0.01-0.1
Nov-16	24.63	6.16-49.26	47.62	17.86-83.33	58.86	23.54-94.17	0.12	0.03-0.24	0.14	0.05-0.25	0.12	0.05-0.19
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	110.02	63.7-162.14	206.57	139.57-279.14	259.80	187.94-337.18	0.53	0.31-0.78	0.61	0.41-0.82	0.52	0.38-0.68
Feb-17	55.70	18.57-92.84	89.42	47.69-137.12	111.85	64.76-170.73	0.27	0.09-0.45	0.26	0.14-0.4	0.23	0.13-0.34
Mar-17	70.37	32.48-108.27	124.91	78.07-176.96	189.91	133.45-246.37	0.34	0.16-0.52	0.37	0.23-0.52	0.38	0.27-0.5
Apr-17	56.86	16.24-97.47	108.30	54.15-171.47	180.76	114.83-262.93	0.27	0.08-0.47	0.32	0.16-0.51	0.37	0.23-0.53
May-17	17.97	0-44.92	19.72	0-49.29	62.26	17.79-106.73	0.09	0-0.22	0.06	0-0.15	0.13	0.04-0.22
Jun-17	9.24	0-27.73	10.11	0-30.33	18.27	0-45.67	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Jul-17	17.95	0-44.86	19.68	0-49.21	53.40	17.8-97.9	0.09	0-0.22	0.06	0-0.15	0.11	0.04-0.2
Aug-17	47.58	15.86-87.23	69.63	26.11-121.85	126.12	70.94-189.18	0.23	0.08-0.42	0.21	0.08-0.36	0.25	0.14-0.38
Sep-17	15.49	0-38.74	25.40	0-59.26	53.55	15.3-99.44	0.07	0-0.19	0.07	0-0.17	0.11	0.03-0.2
Oct-17	33.98	0-76.45	46.52	9.3-93.05	92.17	41.89-150.82	0.16	0-0.37	0.14	0.03-0.27	0.19	0.08-0.3
Nov-17	37.76	9.44-75.53	41.15	10.29-82.3	129.86	64.93-213.34	0.18	0.05-0.36	0.12	0.03-0.24	0.26	0.13-0.43
Dec-17	26.89	0-62.74	48.93	9.79-97.85	44.40	8.88-88.81	0.13	0-0.3	0.14	0.03-0.29	0.09	0.02-0.18
Jan-18	9.71	0-29.12	10.59	0-31.78	9.52	0-38.07	0.05	0-0.14	0.03	0-0.09	0.02	0-0.08
Feb-18	54.76	18.25-100.4	69.66	19.9-119.41	144.11	81.06-216.17	0.26	0.09-0.48	0.21	0.06-0.35	0.29	0.16-0.44
Mar-18	184.69	106.93-262.45	220.03	125.73-314.33	216.24	131.62-310.26	0.89	0.51-1.26	0.65	0.37-0.93	0.44	0.27-0.63
Apr-18	328.24	215.7-440.78	562.26	429.36-705.38	523.69	395.06-652.31	1.58	1.04-2.12	1.66	1.27-2.08	1.06	0.8-1.32
May-18	8.74	0-26.49	19.55	0.51-48.49	27.68	2.25-62.32	0.04	0-0.13	0.06	0-0.14	0.06	0-0.13
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	18.56	0-46.4	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Aug-18	10.00	0-30	10.93	0-32.79	29.94	0-69.86	0.05	0-0.14	0.03	0-0.1	0.06	0-0.14

Table 5.4. Razorbill design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	12.55	0-31.37	31.05	6.21-62.1	0.00	0-0	0.04	0-0.09	0.06	0.01-0.13
Nov-16	29.67	7.42-59.38	57.37	21.51-100.4	70.91	28.36-114.67	0.14	0.04-0.29	0.17	0.06-0.3	0.14	0.06-0.23
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	132.56	77.93-196.53	248.87	169.3-335.17	313.01	226.43-406.25	0.64	0.37-0.95	0.73	0.5-0.99	0.63	0.46-0.82
Feb-17	67.11	23.64-111.86	107.74	57.46-163.98	134.76	78.02-204.49	0.32	0.11-0.54	0.32	0.17-0.48	0.27	0.16-0.41
Mar-17	84.79	40.21-130.44	150.50	94.06-213.21	228.81	160.78-298.93	0.41	0.19-0.63	0.44	0.28-0.63	0.46	0.32-0.6
Apr-17	68.50	19.57-119.1	130.48	65.24-206.59	217.79	136.7-315.1	0.33	0.09-0.57	0.38	0.19-0.61	0.44	0.28-0.64
May-17	21.65	0-54.12	23.75	0-59.39	75.01	21.43-128.59	0.10	0-0.26	0.07	0-0.18	0.15	0.04-0.26
Jun-17	11.14	0-33.41	12.18	0-36.55	22.01	0-55.02	0.05	0-0.16	0.04	0-0.11	0.04	0-0.11
Jul-17	21.62	0-54.05	23.72	0-59.29	64.34	21.45-117.96	0.10	0-0.26	0.07	0-0.17	0.13	0.04-0.24
Aug-17	57.32	19.11-105.09	83.89	31.46-146.81	151.96	85.47-227.93	0.28	0.09-0.51	0.25	0.09-0.43	0.31	0.17-0.46
Sep-17	18.67	0-46.67	30.60	0-71.4	64.51	18.43-118.25	0.09	0-0.22	0.09	0-0.21	0.13	0.04-0.24
Oct-17	40.94	1.74-90.37	56.05	11.21-112.11	111.04	50.47-181.75	0.20	0.01-0.43	0.17	0.03-0.33	0.22	0.1-0.37
Nov-17	45.50	11.37-91	49.58	12.39-99.15	156.45	78.23-255.13	0.22	0.05-0.44	0.15	0.04-0.29	0.32	0.16-0.52
Dec-17	32.40	0-75.59	58.95	11.79-117.89	53.50	10.7-107	0.16	0-0.36	0.17	0.03-0.35	0.11	0.02-0.22
Jan-18	11.69	0-35.08	12.76	0-38.29	11.47	0-43.92	0.06	0-0.17	0.04	0-0.11	0.02	0-0.09
Feb-18	65.98	21.99-120.97	83.92	26.02-143.87	171.79	97.62-258.6	0.32	0.11-0.58	0.25	0.08-0.42	0.35	0.2-0.52
Mar-18	222.52	128.83-318.2	262.95	151.49-374.42	256.68	154.73-368.03	1.07	0.62-1.53	0.78	0.45-1.1	0.52	0.31-0.74
Apr-18	393.55	263.72-529.14	677.42	517.3-849.86	630.95	475.98-785.92	1.89	1.27-2.54	2.00	1.53-2.51	1.27	0.96-1.59
May-18	10.56	0-31.89	23.55	0.61-58.47	33.34	2.66-73.66	0.05	0-0.15	0.07	0-0.17	0.07	0.01-0.15

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-18	0.00	0-0	12.36	0-37.07	22.36	0-55.91	0.00	0-0	0.04	0-0.11	0.05	0-0.11
Aug-18	12.05	0-36.14	13.17	0-39.51	36.07	0-84.17	0.06	0-0.17	0.04	0-0.12	0.07	0-0.17

Table 5.5. Razorbill design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jul-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Sep-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-18	0	0-0	0.00	0-0	9.01	0-36.03	0	0-0	0.00	0-0	0.02	0-0.07
Mar-18	0	0-0	10.48	0-31.43	18.80	0-47.01	0	0-0	0.03	0-0.09	0.04	0-0.09
Apr-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

Table 5.6. Razorbill design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jul-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Sep-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-18	0	0-0	0.00	0-0	9.01	0-36.03	0	0-0	0.00	0-0	0.02	0-0.07
Mar-18	0	0-0	10.48	0-31.43	18.80	0-47.01	0	0-0	0.03	0-0.09	0.04	0-0.09
Apr-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

Table 5.7. Razorbill design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	10.41	0-26.04	25.77	5.15-51.54	0.00	0-0	0.03	0-0.08	0.05	0.01-0.1
Nov-16	24.63	6.16-49.41	47.62	17.86-83.33	58.86	23.54-100.06	0.12	0.03-0.24	0.14	0.05-0.25	0.12	0.05-0.2
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	110.02	69.49-167.93	206.57	145.15-273.56	259.80	187.94-337.18	0.53	0.33-0.81	0.61	0.43-0.81	0.52	0.38-0.68
Feb-17	55.70	24.76-92.84	89.42	47.69-131.15	111.85	64.76-164.84	0.27	0.12-0.45	0.26	0.14-0.39	0.23	0.13-0.33
Mar-17	70.37	37.76-108.27	124.91	78.07-176.96	189.91	133.45-256.64	0.34	0.18-0.52	0.37	0.23-0.52	0.38	0.27-0.52
Apr-17	56.86	16.24-105.59	108.30	54.15-171.47	180.76	106.81-254.71	0.27	0.08-0.51	0.32	0.16-0.51	0.37	0.22-0.51
May-17	17.97	0-44.92	19.72	0-49.29	62.26	17.79-106.73	0.09	0-0.22	0.06	0-0.15	0.13	0.04-0.22
Jun-17	9.24	0-27.73	10.11	0-30.33	18.27	0-45.67	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Jul-17	17.95	0-44.86	19.68	0-49.21	53.40	17.8-97.9	0.09	0-0.22	0.06	0-0.15	0.11	0.04-0.2
Aug-17	47.58	15.86-87.23	69.63	26.11-121.85	126.12	70.94-189.18	0.23	0.08-0.42	0.21	0.08-0.36	0.25	0.14-0.38
Sep-17	15.49	0-38.74	25.40	0-59.26	53.55	15.3-91.79	0.07	0-0.19	0.07	0-0.17	0.11	0.03-0.19
Oct-17	33.98	8.49-67.96	46.52	9.3-93.05	92.17	41.89-151.03	0.16	0.04-0.33	0.14	0.03-0.27	0.19	0.08-0.3
Nov-17	37.76	9.44-75.53	41.15	10.29-82.3	129.86	64.93-204.06	0.18	0.05-0.36	0.12	0.03-0.24	0.26	0.13-0.41
Dec-17	26.89	0-62.74	48.93	9.79-97.85	44.40	8.88-88.81	0.13	0-0.3	0.14	0.03-0.29	0.09	0.02-0.18
Jan-18	9.71	0-29.12	10.59	0-31.78	9.52	0-28.55	0.05	0-0.14	0.03	0-0.09	0.02	0-0.06
Feb-18	54.76	18.25-100.4	69.66	29.85-119.41	135.11	80.84-207.16	0.26	0.09-0.48	0.21	0.09-0.35	0.27	0.16-0.42
Mar-18	184.69	106.93-272.17	209.56	125.73-293.38	197.44	112.82-282.05	0.89	0.51-1.31	0.62	0.37-0.87	0.40	0.23-0.57
Apr-18	328.24	234.46-431.41	562.26	429.36-705.38	523.69	395.06-652.31	1.58	1.13-2.07	1.66	1.27-2.08	1.06	0.8-1.32
May-18	8.62	0-25.85	18.78	0-46.96	25.99	0-51.97	0.04	0-0.12	0.06	0-0.14	0.05	0-0.1
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	18.56	0-46.4	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Aug-18	10.00	0-30	10.93	0-32.79	29.94	0-69.86	0.05	0-0.14	0.03	0-0.1	0.06	0-0.14

Table 5.8. Razorbill design based estimates of birds on the sea surface and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	12.55	0-31.37	31.05	6.21-62.1	0.00	0-0	0.04	0-0.09	0.06	0.01-0.13
Nov-16	29.67	7.42-59.53	57.37	21.51-100.4	70.91	28.36-120.55	0.14	0.04-0.29	0.17	0.06-0.3	0.14	0.06-0.24
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	132.56	83.72-202.32	248.87	174.88-329.59	313.01	226.43-406.25	0.64	0.4-0.97	0.73	0.52-0.97	0.63	0.46-0.82
Feb-17	67.11	29.83-111.86	107.74	57.46-158.02	134.76	78.02-198.6	0.32	0.14-0.54	0.32	0.17-0.47	0.27	0.16-0.4
Mar-17	84.79	45.49-130.44	150.50	94.06-213.21	228.81	160.78-309.2	0.41	0.22-0.63	0.44	0.28-0.63	0.46	0.32-0.62
Apr-17	68.50	19.57-127.22	130.48	65.24-206.59	217.79	128.69-306.88	0.33	0.09-0.61	0.38	0.19-0.61	0.44	0.26-0.62
May-17	21.65	0-54.12	23.75	0-59.39	75.01	21.43-128.59	0.10	0-0.26	0.07	0-0.18	0.15	0.04-0.26
Jun-17	11.14	0-33.41	12.18	0-36.55	22.01	0-55.02	0.05	0-0.16	0.04	0-0.11	0.04	0-0.11
Jul-17	21.62	0-54.05	23.72	0-59.29	64.34	21.45-117.96	0.10	0-0.26	0.07	0-0.17	0.13	0.04-0.24
Aug-17	57.32	19.11-105.09	83.89	31.46-146.81	151.96	85.47-227.93	0.28	0.09-0.51	0.25	0.09-0.43	0.31	0.17-0.46
Sep-17	18.67	0-46.67	30.60	0-71.4	64.51	18.43-110.6	0.09	0-0.22	0.09	0-0.21	0.13	0.04-0.22
Oct-17	40.94	10.23-81.87	56.05	11.21-112.11	111.04	50.47-181.96	0.20	0.05-0.39	0.17	0.03-0.33	0.22	0.1-0.37
Nov-17	45.50	11.37-91	49.58	12.39-99.15	156.45	78.23-245.86	0.22	0.05-0.44	0.15	0.04-0.29	0.32	0.16-0.5
Dec-17	32.40	0-75.59	58.95	11.79-117.89	53.50	10.7-107	0.16	0-0.36	0.17	0.03-0.35	0.11	0.02-0.22
Jan-18	11.69	0-35.08	12.76	0-38.29	11.47	0-34.4	0.06	0-0.17	0.04	0-0.11	0.02	0-0.07
Feb-18	65.98	21.99-120.97	83.92	35.97-143.87	162.78	97.4-249.59	0.32	0.11-0.58	0.25	0.11-0.42	0.33	0.2-0.5
Mar-18	222.52	128.83-327.92	252.48	151.49-353.47	237.87	135.93-339.82	1.07	0.62-1.58	0.74	0.45-1.04	0.48	0.27-0.69
Apr-18	395.47	282.48-519.77	677.42	517.3-849.86	630.95	475.98-785.92	1.90	1.36-2.5	2.00	1.53-2.51	1.27	0.96-1.59
May-18	10.38	0-31.14	22.63	0-56.58	31.31	0-62.62	0.05	0-0.15	0.07	0-0.17	0.06	0-0.13
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	12.36	0-37.07	22.36	0-55.91	0.00	0-0	0.04	0-0.11	0.05	0-0.11
Aug-18	12.05	0-36.14	13.17	0-39.51	36.07	0-84.17	0.06	0-0.17	0.04	0-0.12	0.07	0-0.17

Table 5.9. Razorbill design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	10.41	0-26.04	25.77	5.15-51.54	0.00	0-0	0.03	0-0.08	0.05	0.01-0.1
Nov-16	24.63	6.16-49.41	47.62	17.86-83.33	58.86	23.54-100.06	0.12	0.03-0.24	0.14	0.05-0.25	0.12	0.05-0.2
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	110.02	69.49-167.93	206.57	145.15-273.56	259.80	187.94-337.18	0.53	0.33-0.81	0.61	0.43-0.81	0.52	0.38-0.68
Feb-17	55.70	24.76-92.84	89.42	47.69-131.15	111.85	64.76-164.84	0.27	0.12-0.45	0.26	0.14-0.39	0.23	0.13-0.33
Mar-17	70.37	37.76-108.27	124.91	78.07-176.96	189.91	133.45-256.64	0.34	0.18-0.52	0.37	0.23-0.52	0.38	0.27-0.52
Apr-17	56.86	16.24-105.59	108.30	54.15-171.47	180.76	106.81-254.71	0.27	0.08-0.51	0.32	0.16-0.51	0.37	0.22-0.51
May-17	17.97	0-44.92	19.72	0-49.29	62.26	17.79-106.73	0.09	0-0.22	0.06	0-0.15	0.13	0.04-0.22
Jun-17	9.24	0-27.73	10.11	0-30.33	18.27	0-45.67	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Jul-17	17.95	0-44.86	19.68	0-49.21	53.40	17.8-97.9	0.09	0-0.22	0.06	0-0.15	0.11	0.04-0.2
Aug-17	47.58	15.86-87.23	69.63	26.11-121.85	126.12	70.94-189.18	0.23	0.08-0.42	0.21	0.08-0.36	0.25	0.14-0.38
Sep-17	15.49	0-38.74	25.40	0-59.26	53.55	15.3-91.79	0.07	0-0.19	0.07	0-0.17	0.11	0.03-0.19
Oct-17	33.98	8.49-67.96	46.52	9.3-93.05	92.17	41.89-151.03	0.16	0.04-0.33	0.14	0.03-0.27	0.19	0.08-0.3
Nov-17	37.76	9.44-75.53	41.15	10.29-82.3	129.86	64.93-204.06	0.18	0.05-0.36	0.12	0.03-0.24	0.26	0.13-0.41
Dec-17	26.89	0-62.74	48.93	9.79-97.85	44.40	8.88-88.81	0.13	0-0.3	0.14	0.03-0.29	0.09	0.02-0.18
Jan-18	9.71	0-29.12	10.59	0-31.78	9.52	0-28.55	0.05	0-0.14	0.03	0-0.09	0.02	0-0.06
Feb-18	54.76	18.25-100.4	69.66	29.85-119.41	135.11	80.84-207.16	0.26	0.09-0.48	0.21	0.09-0.35	0.27	0.16-0.42
Mar-18	184.69	106.93-272.17	209.56	125.73-293.38	197.44	112.82-282.05	0.89	0.51-1.31	0.62	0.37-0.87	0.40	0.23-0.57
Apr-18	318.86	234.46-431.41	562.26	429.36-705.38	523.69	395.06-652.31	1.53	1.13-2.07	1.66	1.27-2.08	1.06	0.8-1.32
May-18	8.87	0-26.36	19.55	0.51-48.74	27.68	1.97-55.36	0.04	0-0.13	0.06	0-0.14	0.06	0-0.11
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	18.56	0-46.4	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Aug-18	10.00	0-30	10.93	0-32.79	29.94	0-69.86	0.05	0-0.14	0.03	0-0.1	0.06	0-0.14

Table 5.10. Razorbill design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	12.55	0-31.37	31.05	6.21-62.1	0.00	0-0	0.04	0-0.09	0.06	0.01-0.13
Nov-16	29.67	7.42-59.53	57.37	21.51-100.4	70.91	28.36-120.55	0.14	0.04-0.29	0.17	0.06-0.3	0.14	0.06-0.24
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	132.56	83.72-202.32	248.87	174.88-329.59	313.01	226.43-406.25	0.64	0.4-0.97	0.73	0.52-0.97	0.63	0.46-0.82
Feb-17	67.11	29.83-111.86	107.74	57.46-158.02	134.76	78.02-198.6	0.32	0.14-0.54	0.32	0.17-0.47	0.27	0.16-0.4
Mar-17	84.79	45.49-130.44	150.50	94.06-213.21	228.81	160.78-309.2	0.41	0.22-0.63	0.44	0.28-0.63	0.46	0.32-0.62
Apr-17	68.50	19.57-127.22	130.48	65.24-206.59	217.79	128.69-306.88	0.33	0.09-0.61	0.38	0.19-0.61	0.44	0.26-0.62
May-17	21.65	0-54.12	23.75	0-59.39	75.01	21.43-128.59	0.10	0-0.26	0.07	0-0.18	0.15	0.04-0.26
Jun-17	11.14	0-33.41	12.18	0-36.55	22.01	0-55.02	0.05	0-0.16	0.04	0-0.11	0.04	0-0.11
Jul-17	21.62	0-54.05	23.72	0-59.29	64.34	21.45-117.96	0.10	0-0.26	0.07	0-0.17	0.13	0.04-0.24
Aug-17	57.32	19.11-105.09	83.89	31.46-146.81	151.96	85.47-227.93	0.28	0.09-0.51	0.25	0.09-0.43	0.31	0.17-0.46
Sep-17	18.67	0-46.67	30.60	0-71.4	64.51	18.43-110.6	0.09	0-0.22	0.09	0-0.21	0.13	0.04-0.22
Oct-17	40.94	10.23-81.87	56.05	11.21-112.11	111.04	50.47-181.96	0.20	0.05-0.39	0.17	0.03-0.33	0.22	0.1-0.37
Nov-17	45.50	11.37-91	49.58	12.39-99.15	156.45	78.23-245.86	0.22	0.05-0.44	0.15	0.04-0.29	0.32	0.16-0.5
Dec-17	32.40	0-75.59	58.95	11.79-117.89	53.50	10.7-107	0.16	0-0.36	0.17	0.03-0.35	0.11	0.02-0.22
Jan-18	11.69	0-35.08	12.76	0-38.29	11.47	0-34.4	0.06	0-0.17	0.04	0-0.11	0.02	0-0.07
Feb-18	65.98	21.99-120.97	83.92	35.97-143.87	162.78	97.4-249.59	0.32	0.11-0.58	0.25	0.11-0.42	0.33	0.2-0.5
Mar-18	222.52	128.83-327.92	252.48	151.49-353.47	237.87	135.93-339.82	1.07	0.62-1.58	0.74	0.45-1.04	0.48	0.27-0.69
Apr-18	384.17	282.48-519.77	677.42	517.3-849.86	630.95	475.98-785.92	1.85	1.36-2.5	2.00	1.53-2.51	1.27	0.96-1.59
May-18	10.69	0-31.76	23.55	0.61-58.72	33.34	2.38-66.7	0.05	0-0.15	0.07	0-0.17	0.07	0-0.13

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-18	0.00	0-0	12.36	0-37.07	22.36	0-55.91	0.00	0-0	0.04	0-0.11	0.05	0-0.11
Aug-18	12.05	0-36.14	13.17	0-39.51	36.07	0-84.17	0.06	0-0.17	0.04	0-0.12	0.07	0-0.17

Table 6.1. Guillemot design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	29.57	0-69	97.96	44.53-160.29	0.04	0-0.13	0.09	0-0.2	0.20	0.09-0.32
Oct-16	91.27	53.69-134.22	140.59	93.73-197.87	226.78	164.93-288.63	0.44	0.26-0.65	0.41	0.28-0.58	0.46	0.33-0.58
Nov-16	80.04	36.94-123.14	303.56	226.18-386.88	506.17	400.23-612.12	0.38	0.18-0.59	0.90	0.67-1.14	1.02	0.81-1.24
Dec-16	1028.22	905.08-1163.67	1789.77	1636.7-1972.28	2729.38	2543.55-2926.83	4.94	4.35-5.6	5.28	4.83-5.82	5.51	5.14-5.91
Jan-17	1505.55	1372.37-1632.95	2752.35	2584.86-2931	3670.33	3449.23-3874.85	7.24	6.6-7.85	8.12	7.63-8.65	7.41	6.97-7.83
Feb-17	198.06	129.98-259.96	351.73	274.23-447.12	547.50	441.53-665.24	0.95	0.63-1.25	1.04	0.81-1.32	1.11	0.89-1.34
Mar-17	319.39	249.01-400.59	754.69	645.39-874.4	1036.81	918.76-1165.26	1.54	1.2-1.93	2.23	1.9-2.58	2.09	1.86-2.35
Apr-17	795.99	666.04-934.08	1164.19	983.7-1344.91	1405.02	1232.47-1585.78	3.83	3.2-4.49	3.43	2.9-3.97	2.84	2.49-3.2
May-17	89.83	44.92-152.71	118.30	59.15-187.3	168.99	97.83-249.03	0.43	0.22-0.73	0.35	0.17-0.55	0.34	0.2-0.5
Jun-17	9.24	0-27.73	10.11	0-30.33	9.13	0-27.63	0.04	0-0.13	0.03	0-0.09	0.02	0-0.06
Jul-17	125.62	62.81-188.43	255.90	167.32-354.33	364.91	267.01-471.71	0.60	0.3-0.91	0.75	0.49-1.05	0.74	0.54-0.95
Aug-17	293.40	206.18-380.83	478.70	365.55-600.55	764.62	638.5-906.51	1.41	0.99-1.83	1.41	1.08-1.77	1.54	1.29-1.83
Sep-17	54.23	15.49-100.72	76.20	33.86-126.99	99.44	53.55-152.99	0.26	0.07-0.48	0.22	0.1-0.37	0.20	0.11-0.31
Oct-17	144.41	84.94-212.36	195.40	120.96-270.07	259.74	175.95-343.53	0.69	0.41-1.02	0.58	0.36-0.8	0.52	0.36-0.69
Nov-17	1038.48	887.43-1198.98	1419.63	1224.18-1604.8	1771.62	1558.28-1975.91	4.99	4.27-5.77	4.19	3.61-4.73	3.58	3.15-3.99
Dec-17	600.51	475.03-734.95	1027.44	861.1-1193.79	1394.30	1216.68-1580.8	2.89	2.28-3.53	3.03	2.54-3.52	2.82	2.46-3.19
Jan-18	77.65	29.12-135.88	116.54	52.97-190.7	199.88	123.74-285.55	0.37	0.14-0.65	0.34	0.16-0.56	0.40	0.25-0.58
Feb-18	337.71	237.31-438.11	547.30	427.89-696.56	882.69	711.56-1036.04	1.62	1.14-2.11	1.61	1.26-2.05	1.78	1.44-2.09

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Mar-18	816.52	660.99-952.61	1246.86	1058.26-1456.41	2604.28	2369.23-2839.55	3.93	3.18-4.58	3.68	3.12-4.3	5.26	4.78-5.73
Apr-18	3910.78	3732.59-4098.35	5223.90	4968.33-5459.28	6109.67	5797.29-6403.67	18.81	17.95-19.71	15.41	14.66-16.1	12.34	11.71-12.93
May-18	542.78	430.78-654.79	695.04	544.76-845.31	788.25	632.34-944.17	2.61	2.07-3.15	2.05	1.61-2.49	1.59	1.28-1.91
Jun-18	0.00	0-0	0.00	0-0	13.74	0-34.36	0.00	0-0	0.00	0-0	0.03	0-0.07
Jul-18	18.70	0-46.74	20.51	0-51.27	18.56	0-46.4	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-18	60.00	20-109.99	98.37	43.72-163.95	119.76	59.63-189.61	0.29	0.1-0.53	0.29	0.13-0.48	0.24	0.12-0.38

Table 6.2. Guillemot design based estimates of birds in flight and on sea and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	11.83	0-35.48	38.91	0-90.79	128.89	58.59-210.91	0.06	0-0.17	0.11	0-0.27	0.26	0.12-0.43
Oct-16	120.09	68.95-176.61	184.99	123.33-258.71	298.40	217.02-381.41	0.58	0.33-0.85	0.55	0.36-0.76	0.60	0.44-0.77
Nov-16	105.32	48.61-163.97	399.42	295.72-509.06	666.02	528.48-803.56	0.51	0.23-0.79	1.18	0.87-1.5	1.35	1.07-1.62
Dec-16	1347.09	1183.12-1527.26	2345.67	2138.68-2580.24	3582.12	3337.56-3841.96	6.48	5.69-7.34	6.92	6.31-7.61	7.23	6.74-7.76
Jan-17	1977.34	1802.09-2146.79	3614.46	3390.55-3846	4820.66	4531.47-5088.02	9.51	8.67-10.32	10.66	10-11.35	9.74	9.15-10.28
Feb-17	260.61	172.98-344	462.81	358.95-586.43	720.39	579.1-871.6	1.25	0.83-1.65	1.37	1.06-1.73	1.45	1.17-1.76
Mar-17	420.25	325.94-527.09	993.01	849.15-1147.23	1364.22	1207.27-1534.85	2.02	1.57-2.53	2.93	2.5-3.38	2.76	2.44-3.1
Apr-17	1047.36	878.93-1229.05	1531.83	1294.34-1766.7	1848.71	1619.08-2089.15	5.04	4.23-5.91	4.52	3.82-5.21	3.73	3.27-4.22
May-17	118.20	59.1-198.1	155.65	77.83-246.45	222.35	128.73-327.68	0.57	0.28-0.95	0.46	0.23-0.73	0.45	0.26-0.66
Jun-17	12.16	0-36.49	13.30	0-39.91	12.02	0-36.28	0.06	0-0.18	0.04	0-0.12	0.02	0-0.07
Jul-17	165.29	82.64-250.77	336.71	220.16-469.33	480.15	348.52-620.68	0.79	0.4-1.21	0.99	0.65-1.38	0.97	0.7-1.25
Aug-17	386.06	271.28-501.03	629.87	480.99-790.2	1006.08	835.15-1192.77	1.86	1.3-2.41	1.86	1.42-2.33	2.03	1.69-2.41
Sep-17	71.36	22.83-132.52	100.26	44.49-167.1	130.85	70.46-201.3	0.34	0.11-0.64	0.30	0.13-0.49	0.26	0.14-0.41
Oct-17	190.01	109.09-279.42	251.23	153.28-352.34	336.47	226.23-446.72	0.91	0.52-1.34	0.74	0.45-1.04	0.68	0.46-0.9
Nov-17	1357.48	1155.75-1571.64	1848.45	1591.27-2092.09	2307.64	2024.01-2579.38	6.53	5.56-7.56	5.45	4.69-6.17	4.66	4.09-5.21
Dec-17	790.14	625.04-964.21	1351.90	1129.93-1576.96	1834.61	1592.49-2082.81	3.80	3.01-4.64	3.99	3.33-4.65	3.71	3.22-4.21

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jan-18	102.16	38.31-178.79	153.34	69.7-250.92	263.00	162.81-378.72	0.49	0.18-0.86	0.45	0.21-0.74	0.53	0.33-0.76
Feb-18	421.30	292.08-550.53	688.71	531.59-878.82	1107.39	893.6-1311.94	2.03	1.4-2.65	2.03	1.57-2.59	2.24	1.8-2.65
Mar-18	1012.98	814.48-1195.11	1567.81	1322.96-1836.92	3301.98	2995.61-3611.48	4.87	3.92-5.75	4.62	3.9-5.42	6.67	6.05-7.29
Apr-18	5122.07	4884.58-5368.87	6828.35	6492.08-7137.99	7957.80	7552.58-8341.74	24.63	23.49-25.82	20.14	19.15-21.06	16.07	15.25-16.85
May-18	714.19	564.1-864.28	914.52	719.75-1112.33	1037.18	832.02-1242.33	3.43	2.71-4.16	2.70	2.12-3.28	2.09	1.68-2.51
Jun-18	0.00	0-0	0.00	0-0	18.08	0-45.21	0.00	0-0	0.00	0-0	0.04	0-0.09
Jul-18	24.60	0-61.5	26.99	0-67.47	24.42	0-61.06	0.12	0-0.3	0.08	0-0.2	0.05	0-0.12
Aug-18	78.94	26.31-144.73	129.43	57.53-215.72	157.57	78.54-249.49	0.38	0.13-0.7	0.38	0.17-0.64	0.32	0.16-0.5

Table 6.3. Guillemot design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	29.57	0-69	97.96	44.53-160.29	0.04	0-0.13	0.09	0-0.2	0.20	0.09-0.32
Oct-16	91.27	53.69-134.22	140.59	93.73-197.87	226.78	164.93-288.63	0.44	0.26-0.65	0.41	0.28-0.58	0.46	0.33-0.58
Nov-16	80.04	36.94-123.14	303.56	226.18-386.88	506.17	400.23-612.12	0.38	0.18-0.59	0.90	0.67-1.14	1.02	0.81-1.24
Dec-16	1028.22	905.08-1163.67	1795.66	1636.7-1972.28	2729.38	2543.55-2926.83	4.94	4.35-5.6	5.30	4.83-5.82	5.51	5.14-5.91
Jan-17	1505.55	1372.37-1632.95	2752.35	2584.86-2931	3670.33	3449.23-3874.85	7.24	6.6-7.85	8.12	7.63-8.65	7.41	6.97-7.83
Feb-17	198.06	129.98-259.96	351.73	274.23-447.12	547.50	441.53-665.24	0.95	0.63-1.25	1.04	0.81-1.32	1.11	0.89-1.34
Mar-17	319.39	249.01-400.59	754.69	645.39-874.4	1036.81	918.76-1165.26	1.54	1.2-1.93	2.23	1.9-2.58	2.09	1.86-2.35
Apr-17	795.99	666.04-934.08	1164.19	983.7-1344.91	1405.02	1232.47-1585.78	3.83	3.2-4.49	3.43	2.9-3.97	2.84	2.49-3.2
May-17	89.83	44.92-152.71	118.30	59.15-187.3	168.99	97.83-249.03	0.43	0.22-0.73	0.35	0.17-0.55	0.34	0.2-0.5
Jun-17	9.24	0-27.73	10.11	0-30.33	9.13	0-27.63	0.04	0-0.13	0.03	0-0.09	0.02	0-0.06
Jul-17	125.62	62.81-188.43	255.90	167.32-354.33	364.91	267.01-471.71	0.60	0.3-0.91	0.75	0.49-1.05	0.74	0.54-0.95
Aug-17	293.40	206.18-380.83	478.70	365.55-600.55	768.56	638.5-906.51	1.41	0.99-1.83	1.41	1.08-1.77	1.55	1.29-1.83
Sep-17	54.23	15.49-100.72	76.20	33.86-126.99	99.44	53.55-152.99	0.26	0.07-0.48	0.22	0.1-0.37	0.20	0.11-0.31
Oct-17	144.41	84.94-212.36	195.40	120.96-270.07	259.74	175.95-343.53	0.69	0.41-1.02	0.58	0.36-0.8	0.52	0.36-0.69
Nov-17	1038.48	887.43-1198.98	1419.63	1224.18-1604.8	1771.62	1558.28-1975.91	4.99	4.27-5.77	4.19	3.61-4.73	3.58	3.15-3.99
Dec-17	600.51	475.03-734.95	1027.44	861.1-1193.79	1394.30	1216.68-1580.8	2.89	2.28-3.53	3.03	2.54-3.52	2.82	2.46-3.19
Jan-18	77.65	29.12-135.88	116.54	52.97-190.7	199.88	123.74-285.55	0.37	0.14-0.65	0.34	0.16-0.56	0.40	0.25-0.58
Feb-18	337.71	237.31-438.11	547.30	427.89-696.56	882.69	711.56-1036.04	1.62	1.14-2.11	1.61	1.26-2.05	1.78	1.44-2.09

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Mar-18	816.52	660.99-952.61	1246.86	1058.26-1456.41	2604.28	2369.23-2839.55	3.93	3.18-4.58	3.68	3.12-4.3	5.26	4.78-5.73
Apr-18	3910.78	3732.59-4098.35	5223.90	4968.33-5459.28	6109.67	5797.29-6403.67	18.81	17.95-19.71	15.41	14.66-16.1	12.34	11.71-12.93
May-18	559.76	447.76-672.09	731.59	582.32-882.13	847.48	691.26-1010.41	2.69	2.15-3.23	2.16	1.72-2.6	1.71	1.4-2.04
Jun-18	0.00	0-0	0.00	0-0	13.74	0-34.36	0.00	0-0	0.00	0-0	0.03	0-0.07
Jul-18	18.70	0-46.74	20.51	0-51.27	18.56	0-46.4	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-18	60.00	20-109.99	98.37	43.72-163.95	119.76	59.63-189.61	0.29	0.1-0.53	0.29	0.13-0.48	0.24	0.12-0.38

Table 6.4. Guillemot design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	11.83	0-35.48	38.91	0-90.79	128.89	58.59-210.91	0.06	0-0.17	0.11	0-0.27	0.26	0.12-0.43
Oct-16	120.09	68.95-176.61	184.99	123.33-258.71	298.40	217.02-381.41	0.58	0.33-0.85	0.55	0.36-0.76	0.60	0.44-0.77
Nov-16	105.32	48.61-163.97	399.42	295.72-509.06	666.02	528.48-803.56	0.51	0.23-0.79	1.18	0.87-1.5	1.35	1.07-1.62
Dec-16	1347.09	1183.12-1527.26	2351.56	2138.68-2580.24	3580.29	3337.56-3841.96	6.48	5.69-7.34	6.94	6.31-7.61	7.23	6.74-7.76
Jan-17	1977.34	1802.09-2146.79	3614.46	3390.55-3846	4818.91	4531.47-5088.02	9.51	8.67-10.32	10.66	10-11.35	9.73	9.15-10.28
Feb-17	258.65	172.98-344	462.81	358.95-586.43	720.39	579.1-871.6	1.24	0.83-1.65	1.37	1.06-1.73	1.45	1.17-1.76
Mar-17	420.25	325.94-527.09	994.65	849.15-1147.23	1364.22	1207.27-1534.85	2.02	1.57-2.53	2.93	2.5-3.38	2.76	2.44-3.1
Apr-17	1047.36	878.93-1229.05	1528.98	1294.34-1766.7	1848.71	1619.08-2089.15	5.04	4.23-5.91	4.51	3.82-5.21	3.73	3.27-4.22
May-17	118.20	59.1-198.1	155.65	77.83-246.45	222.35	128.73-327.68	0.57	0.28-0.95	0.46	0.23-0.73	0.45	0.26-0.66
Jun-17	12.16	0-36.49	13.30	0-39.91	12.02	0-36.28	0.06	0-0.18	0.04	0-0.12	0.02	0-0.07
Jul-17	165.29	82.64-250.77	336.71	220.16-469.33	480.15	348.52-620.68	0.79	0.4-1.21	0.99	0.65-1.38	0.97	0.7-1.25
Aug-17	386.06	271.28-501.03	629.87	480.99-790.2	1010.02	835.15-1192.77	1.86	1.3-2.41	1.86	1.42-2.33	2.04	1.69-2.41
Sep-17	71.36	22.83-132.52	100.26	44.49-167.1	130.85	70.46-201.3	0.34	0.11-0.64	0.30	0.13-0.49	0.26	0.14-0.41
Oct-17	190.01	109.09-279.42	251.23	153.28-352.34	336.47	226.23-446.72	0.91	0.52-1.34	0.74	0.45-1.04	0.68	0.46-0.9
Nov-17	1357.48	1155.75-1571.64	1848.45	1591.27-2092.09	2307.64	2024.01-2579.38	6.53	5.56-7.56	5.45	4.69-6.17	4.66	4.09-5.21
Dec-17	790.14	625.04-964.21	1351.90	1129.93-	1834.61	1592.49-	3.80	3.01-4.64	3.99	3.33-4.65	3.71	3.22-4.21

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
				1576.96		2082.81						
Jan-18	102.16	38.31-178.79	153.34	69.7-250.92	263.00	162.81-378.72	0.49	0.18-0.86	0.45	0.21-0.74	0.53	0.33-0.76
Feb-18	421.30	292.08-550.53	688.71	531.59-878.82	1104.55	893.6-1311.94	2.03	1.4-2.65	2.03	1.57-2.59	2.23	1.8-2.65
Mar-18	1012.98	814.48-1195.11	1564.50	1322.96-1836.92	3301.98	2995.61-3611.48	4.87	3.92-5.75	4.62	3.9-5.42	6.67	6.05-7.29
Apr-18	5119.11	4884.58-5368.87	6828.35	6492.08-7137.99	7956.35	7552.58-8341.74	24.62	23.49-25.82	20.14	19.15-21.06	16.07	15.25-16.85
May-18	733.89	583.75-886.87	962.62	768.86-1163.58	1112.46	906.91-1329.92	3.53	2.81-4.26	2.84	2.27-3.43	2.25	1.83-2.69
Jun-18	0.00	0-0	0.00	0-0	18.08	0-45.21	0.00	0-0	0.00	0-0	0.04	0-0.09
Jul-18	24.60	0-61.5	26.99	0-67.47	24.42	0-61.06	0.12	0-0.3	0.08	0-0.2	0.05	0-0.12
Aug-18	78.94	26.31-144.73	129.43	57.53-215.72	157.57	78.54-249.49	0.38	0.13-0.7	0.38	0.17-0.64	0.32	0.16-0.5

Table 6.5. Guillemot design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	18.47	0-43.1	29.44	5.89-58.87	29.04	5.81-58.22	0.09	0-0.21	0.09	0.02-0.17	0.06	0.01-0.12
Jan-17	11.58	0-28.95	22.33	5.58-44.66	27.64	5.53-55.28	0.06	0-0.14	0.07	0.02-0.13	0.06	0.01-0.11
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	18.61	0-46.52	16.76	0-41.89	0.00	0-0	0.05	0-0.14	0.03	0-0.08
Nov-17	28.32	0-56.64	61.72	20.57-113.16	74.20	27.83-129.86	0.14	0-0.27	0.18	0.06-0.33	0.15	0.06-0.26
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	73.02	27.38-127.78	99.51	39.8-159.21	171.13	99.08-252.2	0.35	0.13-0.61	0.29	0.12-0.47	0.35	0.2-0.51
Mar-18	194.41	116.65-281.89	230.51	136.21-335.29	394.87	282.05-507.69	0.93	0.56-1.36	0.68	0.4-0.99	0.80	0.57-1.03
Apr-18	75.03	28.14-131.3	143.12	71.56-224.9	257.25	165.37-339.94	0.36	0.14-0.63	0.42	0.21-0.66	0.52	0.33-0.69
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 6.6. Guillemot design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	18.47	0-43.1	29.44	5.89-58.87	29.04	5.81-58.22	0.09	0-0.21	0.09	0.02-0.17	0.06	0.01-0.12
Jan-17	11.58	0-28.95	22.33	5.58-44.66	27.64	5.53-55.28	0.06	0-0.14	0.07	0.02-0.13	0.06	0.01-0.11
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	18.61	0-46.52	16.76	0-41.89	0.00	0-0	0.05	0-0.14	0.03	0-0.08
Nov-17	28.32	0-56.64	61.72	20.57-113.16	74.20	27.83-129.86	0.14	0-0.27	0.18	0.06-0.33	0.15	0.06-0.26
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	73.02	27.38-127.78	99.51	39.8-159.21	171.13	99.08-252.2	0.35	0.13-0.61	0.29	0.12-0.47	0.35	0.2-0.51
Mar-18	194.41	116.65-281.89	230.51	136.21-335.29	394.87	282.05-507.69	0.93	0.56-1.36	0.68	0.4-0.99	0.80	0.57-1.03
Apr-18	75.03	28.14-131.3	143.12	71.56-224.9	257.25	165.37-339.94	0.36	0.14-0.63	0.42	0.21-0.66	0.52	0.33-0.69
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 6.7. Guillemot design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	29.57	0-69	97.96	44.53-160.29	0.04	0-0.13	0.09	0-0.2	0.20	0.09-0.32
Oct-16	91.27	48.32-134.22	140.59	93.73-192.66	226.78	164.93-293.79	0.44	0.23-0.65	0.41	0.28-0.57	0.46	0.33-0.59
Nov-16	80.04	36.94-129.3	303.56	220.23-386.88	506.17	406.11-606.23	0.38	0.18-0.62	0.90	0.65-1.14	1.02	0.82-1.22
Dec-16	1009.75	880.45-1151.36	1760.34	1589.6-1925.18	2700.35	2514.37-2897.94	4.86	4.23-5.54	5.19	4.69-5.68	5.45	5.08-5.85
Jan-17	1493.97	1360.79-1627.16	2730.01	2551.36-2897.5	3642.69	3427.12-3841.69	7.18	6.54-7.82	8.05	7.53-8.55	7.36	6.92-7.76
Feb-17	198.06	136.17-266.15	351.73	268.27-441.16	547.50	435.64-653.47	0.95	0.65-1.28	1.04	0.79-1.3	1.11	0.88-1.32
Mar-17	319.39	243.6-400.59	754.69	645.26-863.99	1036.81	913.62-1170.39	1.54	1.17-1.93	2.23	1.9-2.55	2.09	1.85-2.36
Apr-17	795.99	674.16-934.08	1164.19	983.7-1335.66	1405.02	1224.26-1594	3.83	3.24-4.49	3.43	2.9-3.94	2.84	2.47-3.22
May-17	89.83	44.92-143.73	118.30	59.15-187.3	168.99	97.83-249.03	0.43	0.22-0.69	0.35	0.17-0.55	0.34	0.2-0.5
Jun-17	9.24	0-27.73	10.11	0-30.33	9.13	0-27.4	0.04	0-0.13	0.03	0-0.09	0.02	0-0.06
Jul-17	125.62	62.81-197.4	255.90	167.32-364.17	364.91	258.11-471.71	0.60	0.3-0.95	0.75	0.49-1.07	0.74	0.52-0.95
Aug-17	293.40	206.18-380.63	478.70	365.55-600.55	764.62	622.73-906.51	1.41	0.99-1.83	1.41	1.08-1.77	1.54	1.26-1.83
Sep-17	54.23	23.24-100.72	76.20	33.65-126.99	99.44	53.55-152.99	0.26	0.11-0.48	0.22	0.1-0.37	0.20	0.11-0.31
Oct-17	144.41	76.45-212.36	176.79	102.35-260.53	242.98	159.2-326.77	0.69	0.37-1.02	0.52	0.3-0.77	0.49	0.32-0.66
Nov-17	1010.16	849.67-1180.09	1357.91	1162.45-1543.08	1697.41	1474.8-1910.98	4.86	4.09-5.67	4.01	3.43-4.55	3.43	2.98-3.86
Dec-17	600.51	475.03-725.99	1027.44	851.31-1213.36	1394.30	1190.04-1589.68	2.89	2.28-3.49	3.03	2.51-3.58	2.82	2.4-3.21
Jan-18	77.65	29.12-135.88	116.54	52.97-190.7	199.88	123.74-295.06	0.37	0.14-0.65	0.34	0.16-0.56	0.40	0.25-0.6
Feb-18	264.69	173.42-355.97	447.79	328.38-577.15	711.56	576.45-873.69	1.27	0.83-1.71	1.32	0.97-1.7	1.44	1.16-1.76

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Mar-18	622.11	486.02-767.92	1016.35	838.22-1204.95	2209.40	1983.53-2444.45	2.99	2.34-3.69	3.00	2.47-3.55	4.46	4.01-4.94
Apr-18	3835.76	3647.95-4023.32	5080.78	4825.21-5315.9	5852.42	5558.42-6137.23	18.45	17.54-19.35	14.99	14.23-15.68	11.82	11.23-12.39
May-18	542.78	422.17-663.4	695.04	554.15-845.55	788.25	632.34-944.17	2.61	2.03-3.19	2.05	1.63-2.49	1.59	1.28-1.91
Jun-18	0.00	0-0	0.00	0-0	13.74	0-34.36	0.00	0-0	0.00	0-0	0.03	0-0.07
Jul-18	18.70	0-46.74	20.51	0-51.27	18.56	0-46.4	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-18	60.00	20-109.99	98.37	43.72-163.95	119.76	59.88-189.61	0.29	0.1-0.53	0.29	0.13-0.48	0.24	0.12-0.38

Table 6.8. Guillemot design based estimates of birds on the sea surface and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	11.83	0-35.48	38.91	0-90.79	128.89	58.59-210.91	0.06	0-0.17	0.11	0-0.27	0.26	0.12-0.43
Oct-16	120.09	63.58-176.61	184.99	123.33-253.5	298.40	217.02-386.56	0.58	0.31-0.85	0.55	0.36-0.75	0.60	0.44-0.78
Nov-16	105.32	48.61-170.13	399.42	289.77-509.06	666.02	534.36-797.67	0.51	0.23-0.82	1.18	0.85-1.5	1.35	1.08-1.61
Dec-16	1328.62	1158.49-1514.95	2316.23	2091.58-2533.14	3553.09	3308.38-3813.07	6.39	5.57-7.28	6.83	6.17-7.47	7.18	6.68-7.7
Jan-17	1965.75	1790.51-2141	3592.12	3357.06-3812.5	4793.02	4509.36-5054.85	9.45	8.61-10.3	10.60	9.9-11.25	9.68	9.11-10.21
Feb-17	260.61	179.17-350.19	462.81	352.99-580.47	720.39	573.22-859.82	1.25	0.86-1.68	1.37	1.04-1.71	1.45	1.16-1.74
Mar-17	420.25	320.53-527.09	993.01	849.02-1136.82	1364.22	1202.14-1539.99	2.02	1.54-2.53	2.93	2.5-3.35	2.76	2.43-3.11
Apr-17	1047.36	887.05-1229.05	1531.83	1294.34-1757.45	1848.71	1610.87-2097.37	5.04	4.27-5.91	4.52	3.82-5.18	3.73	3.25-4.24
May-17	118.20	59.1-189.12	155.65	77.83-246.45	222.35	128.73-327.68	0.57	0.28-0.91	0.46	0.23-0.73	0.45	0.26-0.66
Jun-17	12.16	0-36.49	13.30	0-39.91	12.02	0-36.05	0.06	0-0.18	0.04	0-0.12	0.02	0-0.07
Jul-17	165.29	82.64-259.74	336.71	220.16-479.17	480.15	339.62-620.68	0.79	0.4-1.25	0.99	0.65-1.41	0.97	0.69-1.25
Aug-17	386.06	271.28-500.83	629.87	480.99-790.2	1006.08	819.38-1192.77	1.86	1.3-2.41	1.86	1.42-2.33	2.03	1.65-2.41
Sep-17	71.36	30.58-132.52	100.26	44.28-167.1	130.85	70.46-201.3	0.34	0.15-0.64	0.30	0.13-0.49	0.26	0.14-0.41
Oct-17	190.01	100.59-279.42	232.62	134.67-342.81	319.71	209.47-429.96	0.91	0.48-1.34	0.69	0.4-1.01	0.65	0.42-0.87
Nov-17	1329.16	1117.98-1552.76	1786.72	1529.54-2030.37	2233.44	1940.53-2514.45	6.39	5.38-7.47	5.27	4.51-5.99	4.51	3.92-5.08
Dec-17	790.14	625.04-955.24	1351.90	1120.15-1596.53	1834.61	1565.84-2091.69	3.80	3.01-4.59	3.99	3.3-4.71	3.71	3.16-4.22

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jan-18	102.16	38.31-178.79	153.34	69.7-250.92	263.00	162.81-388.24	0.49	0.18-0.86	0.45	0.21-0.74	0.53	0.33-0.78
Feb-18	348.28	228.18-468.38	589.20	432.08-759.41	936.26	758.49-1149.59	1.67	1.1-2.25	1.74	1.27-2.24	1.89	1.53-2.32
Mar-18	818.57	639.51-1010.42	1337.30	1102.93-1585.46	2907.11	2609.9-3216.38	3.94	3.08-4.86	3.94	3.25-4.68	5.87	5.27-6.5
Apr-18	5047.05	4799.94-5293.85	6685.23	6348.95-6994.61	7700.55	7313.71-8075.3	24.27	23.08-25.46	19.72	18.73-20.63	15.55	14.77-16.31
May-18	714.19	555.48-872.9	914.52	729.14-1112.56	1037.18	832.02-1242.33	3.43	2.67-4.2	2.70	2.15-3.28	2.09	1.68-2.51
Jun-18	0.00	0-0	0.00	0-0	18.08	0-45.21	0.00	0-0	0.00	0-0	0.04	0-0.09
Jul-18	24.60	0-61.5	26.99	0-67.47	24.42	0-61.06	0.12	0-0.3	0.08	0-0.2	0.05	0-0.12
Aug-18	78.94	26.31-144.73	129.43	57.53-215.72	157.57	78.79-249.49	0.38	0.13-0.7	0.38	0.17-0.64	0.32	0.16-0.5

Table 6.9. Guillemot design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	29.57	0-69	97.96	44.53-160.29	0.04	0-0.13	0.09	0-0.2	0.20	0.09-0.32
Oct-16	91.27	48.32-134.22	140.59	93.73-192.66	226.78	164.93-293.79	0.44	0.23-0.65	0.41	0.28-0.57	0.46	0.33-0.59
Nov-16	80.04	36.94-129.3	303.56	220.23-386.88	506.17	406.11-606.23	0.38	0.18-0.62	0.90	0.65-1.14	1.02	0.82-1.22
Dec-16	1009.75	880.45-1151.36	1760.34	1589.6-1925.18	2694.54	2514.37-2897.94	4.86	4.23-5.54	5.19	4.69-5.68	5.44	5.08-5.85
Jan-17	1493.97	1360.79-1627.16	2730.01	2551.36-2897.5	3637.17	3427.12-3841.69	7.18	6.54-7.82	8.05	7.53-8.55	7.35	6.92-7.76
Feb-17	191.87	136.17-266.15	351.73	268.27-441.16	547.50	435.64-653.47	0.92	0.65-1.28	1.04	0.79-1.3	1.11	0.88-1.32
Mar-17	319.39	243.6-400.59	759.89	645.26-863.99	1036.81	913.62-1170.39	1.54	1.17-1.93	2.24	1.9-2.55	2.09	1.85-2.36
Apr-17	795.99	674.16-934.08	1155.17	983.7-1335.66	1405.02	1224.26-1594	3.83	3.24-4.49	3.41	2.9-3.94	2.84	2.47-3.22
May-17	89.83	44.92-143.73	118.30	59.15-187.3	168.99	97.83-249.03	0.43	0.22-0.69	0.35	0.17-0.55	0.34	0.2-0.5
Jun-17	9.24	0-27.73	10.11	0-30.33	9.13	0-27.4	0.04	0-0.13	0.03	0-0.09	0.02	0-0.06
Jul-17	125.62	62.81-197.4	255.90	167.32-364.17	364.91	258.11-471.71	0.60	0.3-0.95	0.75	0.49-1.07	0.74	0.52-0.95
Aug-17	293.40	206.18-380.63	478.70	365.55-600.55	764.62	622.73-906.51	1.41	0.99-1.83	1.41	1.08-1.77	1.54	1.26-1.83
Sep-17	54.23	23.24-100.72	76.20	33.65-126.99	99.44	53.55-152.99	0.26	0.11-0.48	0.22	0.1-0.37	0.20	0.11-0.31
Oct-17	144.41	76.45-212.36	176.79	102.35-260.53	242.98	159.2-326.77	0.69	0.37-1.02	0.52	0.3-0.77	0.49	0.32-0.66
Nov-17	1010.16	849.67-1180.09	1357.91	1162.45-1543.08	1697.41	1474.8-1910.98	4.86	4.09-5.67	4.01	3.43-4.55	3.43	2.98-3.86
Dec-17	600.51	475.03-725.99	1027.44	851.31-1213.36	1394.30	1190.04-1589.68	2.89	2.28-3.49	3.03	2.51-3.58	2.82	2.4-3.21
Jan-18	77.65	29.12-135.88	116.54	52.97-190.7	199.88	123.74-295.06	0.37	0.14-0.65	0.34	0.16-0.56	0.40	0.25-0.6
Feb-18	264.69	173.42-355.97	447.79	328.38-577.15	702.55	576.45-873.69	1.27	0.83-1.71	1.32	0.97-1.7	1.42	1.16-1.76

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Mar-18	622.11	486.02-767.92	1005.87	838.22-1204.95	2209.40	1983.53-2444.45	2.99	2.34-3.69	2.97	2.47-3.55	4.46	4.01-4.94
Apr-18	3826.38	3647.95-4023.32	5080.78	4825.21-5315.9	5847.83	5558.42-6137.23	18.40	17.54-19.35	14.99	14.23-15.68	11.81	11.23-12.39
May-18	551.40	430.65-680.12	731.59	590.7-891.27	839.10	682.9-1011.79	2.65	2.07-3.27	2.16	1.74-2.63	1.69	1.38-2.04
Jun-18	0.00	0-0	0.00	0-0	13.74	0-34.36	0.00	0-0	0.00	0-0	0.03	0-0.07
Jul-18	18.70	0-46.74	20.51	0-51.27	18.56	0-46.4	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-18	60.00	20-109.99	98.37	43.72-163.95	119.76	59.88-189.61	0.29	0.1-0.53	0.29	0.13-0.48	0.24	0.12-0.38

Table 6.10. Guillemot design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions and accounting for availability bias.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	11.83	0-35.48	38.91	0-90.79	128.89	58.59-210.91	0.06	0-0.17	0.11	0-0.27	0.26	0.12-0.43
Oct-16	120.09	63.58-176.61	184.99	123.33-253.5	298.40	217.02-386.56	0.58	0.31-0.85	0.55	0.36-0.75	0.60	0.44-0.78
Nov-16	105.32	48.61-170.13	399.42	289.77-509.06	666.02	534.36-797.67	0.51	0.23-0.82	1.18	0.85-1.5	1.35	1.08-1.61
Dec-16	1328.62	1158.49-1514.95	2316.23	2091.58-2533.14	3545.45	3308.38-3813.07	6.39	5.57-7.28	6.83	6.17-7.47	7.16	6.68-7.7
Jan-17	1965.75	1790.51-2141	3592.12	3357.06-3812.5	4785.74	4509.36-5054.85	9.45	8.61-10.3	10.60	9.9-11.25	9.66	9.11-10.21
Feb-17	252.46	179.17-350.19	462.81	352.99-580.47	720.39	573.22-859.82	1.21	0.86-1.68	1.37	1.04-1.71	1.45	1.16-1.74
Mar-17	420.25	320.53-527.09	999.86	849.02-1136.82	1364.22	1202.14-1539.99	2.02	1.54-2.53	2.95	2.5-3.35	2.76	2.43-3.11
Apr-17	1047.36	887.05-1229.05	1519.96	1294.34-1757.45	1848.71	1610.87-2097.37	5.04	4.27-5.91	4.48	3.82-5.18	3.73	3.25-4.24
May-17	118.20	59.1-189.12	155.65	77.83-246.45	222.35	128.73-327.68	0.57	0.28-0.91	0.46	0.23-0.73	0.45	0.26-0.66
Jun-17	12.16	0-36.49	13.30	0-39.91	12.02	0-36.05	0.06	0-0.18	0.04	0-0.12	0.02	0-0.07
Jul-17	165.29	82.64-259.74	336.71	220.16-479.17	480.15	339.62-620.68	0.79	0.4-1.25	0.99	0.65-1.41	0.97	0.69-1.25
Aug-17	386.06	271.28-500.83	629.87	480.99-790.2	1006.08	819.38-1192.77	1.86	1.3-2.41	1.86	1.42-2.33	2.03	1.65-2.41
Sep-17	71.36	30.58-132.52	100.26	44.28-167.1	130.85	70.46-201.3	0.34	0.15-0.64	0.30	0.13-0.49	0.26	0.14-0.41
Oct-17	190.01	100.59-279.42	232.62	134.67-342.81	319.71	209.47-429.96	0.91	0.48-1.34	0.69	0.4-1.01	0.65	0.42-0.87
Nov-17	1329.16	1117.98-1552.76	1786.72	1529.54-2030.37	2233.44	1940.53-2514.45	6.39	5.38-7.47	5.27	4.51-5.99	4.51	3.92-5.08
Dec-17	790.14	625.04-955.24	1351.90	1120.15-	1834.61	1565.84-	3.80	3.01-4.59	3.99	3.3-4.71	3.71	3.16-4.22

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
				1596.53		2091.69						
Jan-18	102.16	38.31-178.79	153.34	69.7-250.92	263.00	162.81-388.24	0.49	0.18-0.86	0.45	0.21-0.74	0.53	0.33-0.78
Feb-18	348.28	228.18-468.38	589.20	432.08-759.41	924.41	758.49-1149.59	1.67	1.1-2.25	1.74	1.27-2.24	1.87	1.53-2.32
Mar-18	818.57	639.51-1010.42	1323.51	1102.93-1585.46	2907.11	2609.9-3216.38	3.94	3.08-4.86	3.90	3.25-4.68	5.87	5.27-6.5
Apr-18	5034.71	4799.94-5293.85	6685.23	6348.95-6994.61	7694.51	7313.71-8075.3	24.21	23.08-25.46	19.72	18.73-20.63	15.54	14.77-16.31
May-18	725.53	566.65-894.9	962.62	777.23-1172.73	1104.08	898.55-1331.3	3.49	2.72-4.3	2.84	2.29-3.46	2.23	1.81-2.69
Jun-18	0.00	0-0	0.00	0-0	18.08	0-45.21	0.00	0-0	0.00	0-0	0.04	0-0.09
Jul-18	24.60	0-61.5	26.99	0-67.47	24.42	0-61.06	0.12	0-0.3	0.08	0-0.2	0.05	0-0.12
Aug-18	78.94	26.31-144.73	129.43	57.53-215.72	157.57	78.79-249.49	0.38	0.13-0.7	0.38	0.17-0.64	0.32	0.16-0.5

Table 7.1. Sandwich Tern design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
May-18	8.62	0-25.85	9.39	0-28.18	51.97	17.32-95.28	0.04	0-0.12	0.03	0-0.08	0.1	0.03-0.19
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0

Table 7.2. Sandwich Tern design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
May-18	8.62	0-25.85	9.39	0-28.18	51.97	17.32-95.28	0.04	0-0.12	0.03	0-0.08	0.1	0.03-0.19
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.0	0-0

Table 7.3. Sandwich Tern design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jul-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Sep-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

Table 8.1. Commic Tern design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	8.98	0-26.95	9.86	0-29.57	8.89	0-26.68	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Jun-17	0.00	0-0	50.56	10.11-101.11	45.67	9.13-91.33	0.00	0-0	0.15	0.03-0.3	0.09	0.02-0.18
Jul-17	0.00	0-0	0.00	0-0	8.90	0-26.7	0.00	0-0	0.00	0-0	0.02	0-0.05
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	10.22	0-30.67	18.37	0-45.94	0.00	0-0	0.03	0-0.09	0.04	0-0.09
May-18	60.31	17.23-103.39	93.92	37.57-159.67	363.81	268.53-467.76	0.29	0.08-0.5	0.28	0.11-0.47	0.73	0.54-0.94
Jun-18	0.00	0-0	0.00	0-0	116.81	61.84-171.78	0.00	0-0	0.00	0-0	0.24	0.12-0.35

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	70.00	20-129.99	163.95	87.44-251.39	169.65	99.8-249.49	0.34	0.1-0.63	0.48	0.26-0.74	0.34	0.2-0.5

Table 8.2. Commic Tern design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	8.98	0-26.95	9.86	0-29.82	8.89	0-26.68	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Jun-17	0.00	0-0	50.56	10.11-101.11	45.67	9.13-91.33	0.00	0-0	0.15	0.03-0.3	0.09	0.02-0.18
Jul-17	0.00	0-0	0.00	0-0	8.90	0-26.7	0.00	0-0	0.00	0-0	0.02	0-0.05
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	10.22	0-30.67	18.37	0-45.94	0.00	0-0	0.03	0-0.09	0.04	0-0.09
May-18	60.31	17.23-112	93.92	46.96-150.28	363.81	259.86-476.42	0.29	0.08-0.54	0.28	0.14-0.44	0.73	0.52-0.96
Jun-18	0.00	0-0	0.00	0-0	116.81	68.71-178.65	0.00	0-0	0.00	0-0	0.24	0.14-0.36

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	70.00	20-119.99	163.95	87.44-240.46	169.65	89.82-249.49	0.34	0.1-0.58	0.48	0.26-0.71	0.34	0.18-0.5

Table 8.3. Commic Tern design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jul-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Sep-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

Table 9.1. Kittiwake design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	89.87	35.95-144.02	98.57	49.28-157.71	142.48	80.15-213.72	0.43	0.17-0.69	0.29	0.15-0.47	0.29	0.16-0.43
Oct-16	21.48	5.37-42.95	31.24	10.41-57.28	41.23	15.46-72.16	0.10	0.03-0.21	0.09	0.03-0.17	0.08	0.03-0.15
Nov-16	18.47	0-43.1	29.76	5.95-59.52	76.51	35.31-123.6	0.09	0-0.21	0.09	0.02-0.18	0.15	0.07-0.25
Dec-16	6.16	0-18.47	11.77	0-29.44	17.42	0-40.65	0.03	0-0.09	0.03	0-0.09	0.04	0-0.08
Jan-17	11.58	0-28.95	16.75	0-39.08	49.75	16.58-88.44	0.06	0-0.14	0.05	0-0.12	0.10	0.03-0.18
Feb-17	49.52	18.57-86.65	71.54	35.77-113.27	76.53	41.21-123.63	0.24	0.09-0.42	0.21	0.11-0.33	0.15	0.08-0.25
Mar-17	129.92	81.2-184.05	229.01	166.55-296.67	297.70	225.84-379.82	0.62	0.39-0.89	0.68	0.49-0.88	0.60	0.46-0.77
Apr-17	211.18	138.08-292.41	279.77	189.52-370.01	525.86	419.04-657.32	1.02	0.66-1.41	0.83	0.56-1.09	1.06	0.85-1.33
May-17	8.98	0-26.95	19.72	0-49.29	35.58	8.89-80.05	0.04	0-0.13	0.06	0-0.15	0.07	0.02-0.16
Jun-17	120.16	64.7-185.09	151.67	80.89-232.56	191.80	118.73-274	0.58	0.31-0.89	0.45	0.24-0.69	0.39	0.24-0.55
Jul-17	44.86	8.97-80.76	98.42	39.37-167.32	124.60	62.3-195.81	0.22	0.04-0.39	0.29	0.12-0.49	0.25	0.13-0.4
Aug-17	31.72	7.93-63.64	60.93	25.89-104.66	102.47	55.18-157.85	0.15	0.04-0.31	0.18	0.08-0.31	0.21	0.11-0.32
Sep-17	0.00	0-0	0.00	0-0	7.65	0-22.95	0.00	0-0	0.00	0-0	0.02	0-0.05
Oct-17	0.00	0-0	0.00	0-0	25.14	0-58.65	0.00	0-0	0.00	0-0	0.05	0-0.12
Nov-17	113.29	56.64-179.37	144.02	72.01-226.32	157.68	83.48-241.16	0.54	0.27-0.86	0.42	0.21-0.67	0.32	0.17-0.49
Dec-17	188.22	116.52-268.88	293.56	205.49-391.41	373.00	275.31-479.57	0.91	0.56-1.29	0.87	0.61-1.15	0.75	0.56-0.97
Jan-18	9.71	0-29.12	21.19	0-52.97	57.11	19.04-104.7	0.05	0-0.14	0.06	0-0.16	0.12	0.04-0.21
Feb-18	100.40	45.64-164.29	109.46	49.75-179.12	135.11	72.06-198.16	0.48	0.22-0.79	0.32	0.15-0.53	0.27	0.15-0.4
Mar-18	116.65	58.32-194.41	136.21	73.34-209.82	216.24	131.62-300.85	0.56	0.28-0.93	0.40	0.22-0.62	0.44	0.27-0.61
Apr-18	337.62	234.46-440.78	572.48	429.36-715.6	826.87	679.87-983.29	1.62	1.13-2.12	1.69	1.27-2.11	1.67	1.37-1.99
May-18	327.39	232.62-431	422.66	300.56-554.15	641.00	502.4-779.59	1.57	1.12-2.07	1.25	0.89-1.63	1.29	1.01-1.57
Jun-18	103.82	55.37-159.37	234.20	158.65-309.94	439.77	336.7-549.71	0.50	0.27-0.77	0.69	0.47-0.91	0.89	0.68-1.11

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	9.28	0-27.84	0.00	0-0	0.03	0-0.09	0.02	0-0.06
Aug-18	20.00	0-50	21.86	0-54.65	19.96	0-49.9	0.10	0-0.24	0.06	0-0.16	0.04	0-0.1

Table 9.2. Kittiwake design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	98.86	44.94-161.77	108.43	49.28-167.57	151.39	80.15-222.63	0.48	0.22-0.78	0.32	0.15-0.49	0.31	0.16-0.45
Oct-16	204.01	150.33-268.44	79.78	53.05-111.58	81.76	52.48-120.1	0.98	0.72-1.29	0.24	0.16-0.33	0.17	0.11-0.24
Nov-16	30.96	9.24-61.74	44.45	17.86-79.78	108.98	58.44-166.22	0.15	0.04-0.3	0.13	0.05-0.24	0.22	0.12-0.34
Dec-16	18.47	0-43.1	23.55	5.89-47.1	46.46	17.42-81.3	0.09	0-0.21	0.07	0.02-0.14	0.09	0.04-0.16
Jan-17	13.93	0-33.65	19.54	2.79-41.87	60.81	27.64-100.88	0.07	0-0.16	0.06	0.01-0.12	0.12	0.06-0.2
Feb-17	49.52	18.57-86.65	71.54	35.77-113.27	76.53	41.21-123.63	0.24	0.09-0.42	0.21	0.11-0.33	0.15	0.08-0.25
Mar-17	134.74	86.6-188.87	233.67	171.76-301.87	307.14	235.17-384.61	0.65	0.42-0.91	0.69	0.51-0.89	0.62	0.47-0.78
Apr-17	219.30	146.2-300.53	288.79	198.54-379.04	534.07	427.26-673.75	1.05	0.7-1.45	0.85	0.59-1.12	1.08	0.86-1.36
May-17	17.97	0-44.92	29.57	0-69.01	53.36	17.79-97.83	0.09	0-0.22	0.09	0-0.2	0.11	0.04-0.2
Jun-17	138.65	73.94-221.83	182.00	111.22-273.01	219.20	137-301.4	0.67	0.36-1.07	0.54	0.33-0.81	0.44	0.28-0.61
Jul-17	50.95	17.95-97.26	106.62	49.21-173.92	140.17	70.08-211.39	0.24	0.09-0.47	0.31	0.15-0.51	0.28	0.14-0.43
Aug-17	39.65	7.93-79.3	68.55	26.11-115.89	116.57	66.09-177.96	0.19	0.04-0.38	0.20	0.08-0.34	0.24	0.13-0.36
Sep-17	0.00	0-0	0.00	0-0	7.65	0-22.95	0.00	0-0	0.00	0-0	0.02	0-0.05
Oct-17	0.00	0-0	0.00	0-0	25.14	0-58.65	0.00	0-0	0.00	0-0	0.05	0-0.12
Nov-17	113.29	56.64-179.37	144.02	72.01-226.32	173.04	98.83-259.4	0.54	0.27-0.86	0.42	0.21-0.67	0.35	0.2-0.52
Dec-17	188.22	116.52-268.88	293.56	205.49-391.41	373.00	275.31-479.57	0.91	0.56-1.29	0.87	0.61-1.15	0.75	0.56-0.97
Jan-18	9.71	0-29.12	21.19	0-52.97	57.11	19.04-104.7	0.05	0-0.14	0.06	0-0.16	0.12	0.04-0.21
Feb-18	109.53	54.76-173.42	119.41	59.71-189.07	153.12	81.06-225.18	0.53	0.26-0.83	0.35	0.18-0.56	0.31	0.16-0.45
Mar-18	145.81	77.76-233.29	167.64	94.3-261.94	253.85	169-347.86	0.70	0.37-1.12	0.49	0.28-0.77	0.51	0.34-0.7
Apr-18	346.06	242.89-449.22	581.70	438.58-724.85	836.06	689.06-992.44	1.66	1.17-2.16	1.72	1.29-2.14	1.69	1.39-2
May-18	336.01	241.24-439.4	432.05	319.11-572.93	658.32	528.39-805.8	1.62	1.16-2.11	1.27	0.94-1.69	1.33	1.07-1.63
Jun-18	103.82	55.37-159.37	234.20	158.65-309.94	439.77	336.7-549.71	0.50	0.27-0.77	0.69	0.47-0.91	0.89	0.68-1.11

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	9.28	0-27.84	0.00	0-0	0.03	0-0.09	0.02	0-0.06
Aug-18	20.00	0-50	21.86	0-54.65	19.96	0-49.9	0.10	0-0.24	0.06	0-0.16	0.04	0-0.1

Table 9.3. Kittiwake design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	8.91	0-26.72	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Oct-16	16.11	0-37.58	15.62	0-36.45	15.46	0-36.08	0.08	0-0.18	0.05	0-0.11	0.03	0-0.07
Nov-16	6.16	0-18.47	11.90	0-29.76	52.97	17.66-88.29	0.03	0-0.09	0.04	0-0.09	0.11	0.04-0.18
Dec-16	6.16	0-18.47	11.77	0-29.44	11.61	0-29.04	0.03	0-0.09	0.03	0-0.09	0.02	0-0.06
Jan-17	5.79	0-17.37	11.17	0-27.91	38.69	11.06-71.86	0.03	0-0.08	0.03	0-0.08	0.08	0.02-0.15
Feb-17	30.95	6.19-61.89	41.73	11.92-77.5	47.10	17.66-82.42	0.15	0.03-0.3	0.12	0.04-0.23	0.10	0.04-0.17
Mar-17	81.20	43.31-124.51	140.53	88.48-192.58	169.38	118.05-225.97	0.39	0.21-0.6	0.41	0.26-0.57	0.34	0.24-0.46
Apr-17	138.08	81.22-203.06	198.54	117.32-279.77	320.44	230.06-419.04	0.66	0.39-0.98	0.59	0.35-0.83	0.65	0.46-0.85
May-17	0.00	0-0	9.86	0-29.57	17.79	0-44.47	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Jun-17	46.22	9.24-92.43	60.67	20.22-111.22	63.93	18.27-109.6	0.22	0.04-0.44	0.18	0.06-0.33	0.13	0.04-0.22
Jul-17	35.89	8.97-71.78	88.58	39.37-147.64	89.00	35.6-142.4	0.17	0.04-0.35	0.26	0.12-0.44	0.18	0.07-0.29
Aug-17	31.72	7.93-63.44	43.52	8.7-78.55	70.94	31.53-118.24	0.15	0.04-0.31	0.13	0.03-0.23	0.14	0.06-0.24
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	16.76	0-41.89	0.00	0-0	0.00	0-0	0.03	0-0.08
Nov-17	103.85	47.2-169.93	123.45	61.72-195.46	139.13	74.2-213.34	0.50	0.23-0.82	0.36	0.18-0.58	0.28	0.15-0.43
Dec-17	107.55	53.78-179.26	195.70	127.21-274.23	257.55	177.62-355.24	0.52	0.26-0.86	0.58	0.38-0.81	0.52	0.36-0.72
Jan-18	9.71	0-29.12	21.19	0-52.97	47.59	9.52-95.18	0.05	0-0.14	0.06	0-0.16	0.10	0.02-0.19
Feb-18	54.76	18.25-100.4	59.71	19.9-109.46	90.07	36.03-153.12	0.26	0.09-0.48	0.18	0.06-0.32	0.18	0.07-0.31
Mar-18	87.48	38.88-145.81	104.78	41.91-167.64	159.83	84.62-235.04	0.42	0.19-0.7	0.31	0.12-0.49	0.32	0.17-0.47
Apr-18	225.08	149.82-318.86	368.02	265.54-490.7	486.94	367.27-624.75	1.08	0.72-1.53	1.09	0.78-1.45	0.98	0.74-1.26
May-18	249.85	163.7-344.63	328.73	225.42-441.44	424.44	311.84-545.71	1.20	0.79-1.66	0.97	0.66-1.3	0.86	0.63-1.1
Jun-18	55.37	20.76-96.9	120.88	67.99-181.32	226.75	151.17-302.34	0.27	0.1-0.47	0.36	0.2-0.53	0.46	0.31-0.61

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	10.00	0-30	10.93	0-32.79	9.98	0-39.92	0.05	0-0.14	0.03	0-0.1	0.02	0-0.08

Table 9.4. Kittiwake design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	8.91	0-26.72	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Oct-16	16.11	0-37.58	15.62	0-36.45	15.46	0-36.08	0.08	0-0.18	0.05	0-0.11	0.03	0-0.07
Nov-16	6.16	0-18.47	11.90	0-29.76	58.04	23.54-97.64	0.03	0-0.09	0.04	0-0.09	0.12	0.05-0.2
Dec-16	6.16	0-18.47	11.77	0-29.44	11.61	0-29.04	0.03	0-0.09	0.03	0-0.09	0.02	0-0.06
Jan-17	5.79	0-17.37	11.17	0-27.91	41.46	15.2-76.01	0.03	0-0.08	0.03	0-0.08	0.08	0.03-0.15
Feb-17	30.95	6.19-61.89	41.73	11.92-77.5	47.10	17.66-82.42	0.15	0.03-0.3	0.12	0.04-0.23	0.10	0.04-0.17
Mar-17	81.20	43.31-124.51	140.53	88.48-192.58	169.38	118.05-225.97	0.39	0.21-0.6	0.41	0.26-0.57	0.34	0.24-0.46
Apr-17	138.08	81.22-203.06	198.54	117.32-279.77	320.44	230.06-419.04	0.66	0.39-0.98	0.59	0.35-0.83	0.65	0.46-0.85
May-17	0.00	0-0	9.86	0-29.57	17.79	0-44.47	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Jun-17	46.22	9.24-92.43	60.67	20.22-111.22	63.93	18.27-109.6	0.22	0.04-0.44	0.18	0.06-0.33	0.13	0.04-0.22
Jul-17	35.89	8.97-71.78	88.58	39.37-147.64	89.00	35.6-142.4	0.17	0.04-0.35	0.26	0.12-0.44	0.18	0.07-0.29
Aug-17	39.65	7.93-79.3	43.52	16.24-87.04	75.64	31.53-126.12	0.19	0.04-0.38	0.13	0.05-0.26	0.15	0.06-0.25
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	16.76	0-41.89	0.00	0-0	0.00	0-0	0.03	0-0.08
Nov-17	103.85	47.2-169.93	123.45	61.72-195.46	139.13	74.2-213.34	0.50	0.23-0.82	0.36	0.18-0.58	0.28	0.15-0.43
Dec-17	107.55	53.78-179.26	195.70	127.21-274.23	257.55	177.62-355.24	0.52	0.26-0.86	0.58	0.38-0.81	0.52	0.36-0.72
Jan-18	9.71	0-29.12	21.19	0-52.97	47.59	9.52-95.18	0.05	0-0.14	0.06	0-0.16	0.10	0.02-0.19
Feb-18	54.76	18.25-100.4	59.71	19.9-109.46	90.07	36.03-153.12	0.26	0.09-0.48	0.18	0.06-0.32	0.18	0.07-0.31
Mar-18	87.48	38.88-145.81	104.78	41.91-167.64	159.83	84.62-235.04	0.42	0.19-0.7	0.31	0.12-0.49	0.32	0.17-0.47
Apr-18	225.08	149.82-318.86	368.02	265.54-490.7	486.94	367.27-624.75	1.08	0.72-1.53	1.09	0.78-1.45	0.98	0.74-1.26
May-18	249.85	163.7-344.63	328.73	225.42-441.44	433.11	320.28-554.38	1.20	0.79-1.66	0.97	0.66-1.3	0.87	0.65-1.12
Jun-18	55.37	20.76-96.9	113.32	67.99-181.32	226.75	151.17-302.34	0.27	0.1-0.47	0.33	0.2-0.53	0.46	0.31-0.61

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	10.00	0-30	10.93	0-32.79	9.98	0-39.92	0.05	0-0.14	0.03	0-0.1	0.02	0-0.08

Table 9.5. Kittiwake design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	80.88	35.95-134.81	88.71	39.43-147.85	133.58	71.02-204.82	0.39	0.17-0.65	0.26	0.12-0.44	0.27	0.14-0.41
Oct-16	5.37	0-16.11	15.62	0-36.45	25.77	5.15-51.54	0.03	0-0.08	0.05	0-0.11	0.05	0.01-0.1
Nov-16	12.31	0-30.79	17.86	0-41.66	23.54	5.89-47.09	0.06	0-0.15	0.05	0-0.12	0.05	0.01-0.1
Dec-16	0.00	0-0	0.00	0-0	5.81	0-17.42	0.00	0-0	0.00	0-0	0.01	0-0.04
Jan-17	5.79	0-17.37	5.58	0-16.75	11.06	0-27.64	0.03	0-0.08	0.02	0-0.05	0.02	0-0.06
Feb-17	18.57	0-43.33	29.81	5.96-59.62	29.44	5.89-58.87	0.09	0-0.21	0.09	0.02-0.18	0.06	0.01-0.12
Mar-17	48.72	21.65-81.2	88.48	52.05-130.25	128.32	87.13-179.65	0.23	0.1-0.39	0.26	0.15-0.38	0.26	0.18-0.36
Apr-17	73.10	32.49-122.04	81.22	36.1-135.37	205.41	139.68-295.79	0.35	0.16-0.59	0.24	0.11-0.4	0.41	0.28-0.6
May-17	8.98	0-26.95	9.86	0-29.57	17.79	0-44.47	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Jun-17	73.94	27.73-129.4	91.00	40.45-151.67	127.87	63.93-200.94	0.36	0.13-0.62	0.27	0.12-0.45	0.26	0.13-0.41
Jul-17	8.97	0-35.89	9.84	0-29.53	35.60	8.9-71.2	0.04	0-0.17	0.03	0-0.09	0.07	0.02-0.14
Aug-17	0.00	0-0	17.41	0-43.52	31.53	7.69-70.94	0.00	0-0	0.05	0-0.13	0.06	0.02-0.14
Sep-17	0.00	0-0	0.00	0-0	7.65	0-22.95	0.00	0-0	0.00	0-0	0.02	0-0.05
Oct-17	0.00	0-0	0.00	0-0	8.38	0-25.14	0.00	0-0	0.00	0-0	0.02	0-0.05
Nov-17	9.44	0-28.32	20.57	0-51.44	18.55	0-46.38	0.05	0-0.14	0.06	0-0.15	0.04	0-0.09
Dec-17	80.67	35.85-134.44	97.85	39.14-166.35	115.45	62.17-177.62	0.39	0.17-0.65	0.29	0.12-0.49	0.23	0.13-0.36
Jan-18	0.00	0-0	0.00	0-0	9.52	0-28.55	0.00	0-0	0.00	0-0	0.02	0-0.06
Feb-18	45.64	9.13-91.27	49.75	9.95-99.51	45.04	9.01-90.07	0.22	0.04-0.44	0.15	0.03-0.29	0.09	0.02-0.18
Mar-18	29.16	0-58.57	31.43	0-73.34	56.41	9.4-103.42	0.14	0-0.28	0.09	0-0.22	0.11	0.02-0.21
Apr-18	112.54	56.27-178.19	204.46	122.67-296.46	339.94	238.87-450.19	0.54	0.27-0.86	0.60	0.36-0.87	0.69	0.48-0.91
May-18	77.54	34.25-129.23	93.92	46.96-150.28	216.55	138.59-294.51	0.37	0.16-0.62	0.28	0.14-0.44	0.44	0.28-0.59
Jun-18	48.45	13.84-89.98	113.32	60.44-173.76	213.01	144.13-295.47	0.23	0.07-0.43	0.33	0.18-0.51	0.43	0.29-0.6

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	9.28	0-27.84	0.00	0-0	0.03	0-0.09	0.02	0-0.06
Aug-18	10.00	0-30.25	10.93	0-32.79	9.98	0-29.94	0.05	0-0.15	0.03	0-0.1	0.02	0-0.06

Table 9.6. Kittiwake design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	89.87	35.95-143.8	98.57	39.43-157.96	142.48	80.15-213.72	0.43	0.17-0.69	0.29	0.12-0.47	0.29	0.16-0.43
Oct-16	187.91	128.85-246.97	65.63	44.11-91.43	67.54	44.88-97.01	0.90	0.62-1.19	0.19	0.13-0.27	0.14	0.09-0.2
Nov-16	24.80	4.66-54.09	31.48	10.85-64.03	49.72	22.32-85.04	0.12	0.02-0.26	0.09	0.03-0.19	0.10	0.05-0.17
Dec-16	12.31	0-30.79	11.77	0-29.44	34.84	11.61-63.88	0.06	0-0.15	0.03	0-0.09	0.07	0.02-0.13
Jan-17	7.05	0-23.16	8.37	0-22.33	19.35	4.15-38.7	0.03	0-0.11	0.02	0-0.07	0.04	0.01-0.08
Feb-17	18.57	0-43.33	29.81	5.96-59.62	29.44	5.89-58.87	0.09	0-0.21	0.09	0.02-0.18	0.06	0.01-0.12
Mar-17	53.54	21.65-89.64	93.14	56.17-138.92	137.76	91.98-193	0.26	0.1-0.43	0.27	0.17-0.41	0.28	0.19-0.39
Apr-17	81.22	32.49-129.96	90.25	36.1-144.4	213.63	147.9-304.01	0.39	0.16-0.62	0.27	0.11-0.43	0.43	0.3-0.61
May-17	17.97	0-44.92	19.72	0-49.29	35.58	8.89-71.15	0.09	0-0.22	0.06	0-0.15	0.07	0.02-0.14
Jun-17	92.43	46.22-147.89	121.34	60.67-192.12	155.27	91.33-237.47	0.44	0.22-0.71	0.36	0.18-0.57	0.31	0.18-0.48
Jul-17	16.50	0-43.42	18.04	0-45.93	51.16	16.68-92.3	0.08	0-0.21	0.05	0-0.14	0.10	0.03-0.19
Aug-17	0.00	0-0	20.15	0-47.33	40.85	12.58-80.34	0.00	0-0	0.06	0-0.14	0.08	0.03-0.16
Sep-17	0.00	0-0	0.00	0-0	7.65	0-22.95	0.00	0-0	0.00	0-0	0.02	0-0.05
Oct-17	0.00	0-0	0.00	0-0	8.38	0-25.14	0.00	0-0	0.00	0-0	0.02	0-0.05
Nov-17	9.44	0-28.32	20.57	0-51.44	36.79	6.08-70.69	0.05	0-0.14	0.06	0-0.15	0.07	0.01-0.14
Dec-17	80.67	35.85-134.44	97.85	39.14-166.35	115.45	62.17-177.62	0.39	0.17-0.65	0.29	0.12-0.49	0.23	0.13-0.36
Jan-18	0.00	0-0	0.00	0-0	9.52	0-28.55	0.00	0-0	0.00	0-0	0.02	0-0.06
Feb-18	54.76	9.13-100.4	59.71	19.9-109.46	63.05	18.01-117.09	0.26	0.04-0.48	0.18	0.06-0.32	0.13	0.04-0.24
Mar-18	58.32	19.44-106.93	62.87	20.96-115.26	94.02	37.61-150.43	0.28	0.09-0.51	0.19	0.06-0.34	0.19	0.08-0.3
Apr-18	120.98	56.27-185.7	212.68	132.87-306.87	347.80	247.4-458.89	0.58	0.27-0.89	0.63	0.39-0.91	0.70	0.5-0.93
May-18	86.16	34.46-137.85	103.32	56.35-159.67	233.88	147.26-311.84	0.41	0.17-0.66	0.30	0.17-0.47	0.47	0.3-0.63
Jun-18	48.45	13.84-89.98	113.32	60.44-173.76	206.14	144.13-295.47	0.23	0.07-0.43	0.33	0.18-0.51	0.42	0.29-0.6

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	10.25	0-30.76	9.28	0-27.84	0.00	0-0	0.03	0-0.09	0.02	0-0.06
Aug-18	10.00	0-30.25	10.93	0-32.79	9.98	0-29.94	0.05	0-0.15	0.03	0-0.1	0.02	0-0.06

Table 10.1. Black-headed Gull design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	78.33	34.81-130.55	70.94	23.65-126.12	0.00	0-0	0.23	0.1-0.39	0.14	0.05-0.25
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-28.32	51.44	10.29-92.58	64.93	27.59-111.31	0.05	0-0.14	0.15	0.03-0.27	0.13	0.06-0.22
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 10.2. Black-headed Gull design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	88.11	39.7-145.22	78.98	36.39-132.69	0.00	0-0	0.26	0.12-0.43	0.16	0.07-0.27
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-28.32	51.44	10.29-92.58	69.90	30.27-121.3	0.05	0-0.14	0.15	0.03-0.27	0.14	0.06-0.24
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 10.3. Black-headed Gull design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	78.33	34.81-130.77	70.94	31.53-126.12	0.00	0-0	0.23	0.1-0.39	0.14	0.06-0.25
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-28.32	51.44	10.29-102.87	64.93	18.55-120.58	0.05	0-0.14	0.15	0.03-0.3	0.13	0.04-0.24
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 10.4. Black-headed Gull design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	83.22	35.89-139.26	74.13	31.53-126.12	0.00	0-0	0.25	0.11-0.41	0.15	0.06-0.25
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-28.32	51.44	10.29-102.87	64.93	18.55-120.58	0.05	0-0.14	0.15	0.03-0.3	0.13	0.04-0.24
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 10.5. Black-headed Gull design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jul-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Sep-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

Table 10.6. Black-headed Gull design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jul-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-17	0	0-0	4.89	0-14.67	6.37	0-15.92	0	0-0	0.01	0-0.04	0.01	0-0.03
Sep-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-17	0	0-0	0.00	0-0	7.46	0-17.41	0	0-0	0.00	0-0	0.02	0-0.04
Dec-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

Table 11.1. Little Gull design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	67.69	36.45-104.14	118.55	72.16-170.09	0.00	0-0	0.20	0.11-0.31	0.24	0.15-0.34
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	5.79	0-17.37	5.58	0-16.75	5.53	0-16.58	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	37.51	0-75.03	51.11	10.22-102.23	45.94	9.19-91.87	0.18	0-0.36	0.15	0.03-0.3	0.09	0.02-0.19
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 11.2. Little Gull design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	176.65	130.11-230.33	240.88	178.49-302.56	0.00	0-0	0.52	0.38-0.68	0.49	0.36-0.61
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	5.79	0-21.89	5.58	0-18.63	6.43	0.45-18.85	0.03	0-0.11	0.02	0-0.05	0.01	0-0.04
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	38.46	2.83-75.97	51.95	12.69-103.06	45.94	9.66-91.87	0.18	0.01-0.37	0.15	0.04-0.3	0.09	0.02-0.19
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 11.3. Little Gull design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	67.69	36.45-109.35	72.16	36.08-108.37	0.00	0-0	0.20	0.11-0.32	0.15	0.07-0.22
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	5.79	0-17.37	5.58	0-16.75	5.53	0-16.58	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	37.51	9.38-75.03	51.11	10.22-102.23	45.94	9.19-91.87	0.18	0.05-0.36	0.15	0.03-0.3	0.09	0.02-0.19
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 11.4. Little Gull design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	67.69	36.45-109.35	72.16	36.08-108.37	0.00	0-0	0.20	0.11-0.32	0.15	0.07-0.22
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	5.79	0-17.37	5.58	0-16.75	5.98	0-17.49	0.03	0-0.08	0.02	0-0.05	0.01	0-0.04
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	37.51	9.38-75.03	51.11	10.22-102.23	45.94	9.19-91.87	0.18	0.05-0.36	0.15	0.03-0.3	0.09	0.02-0.19
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 11.5. Little Gull design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Oct-16	0	0-0	0	0-0	46.39	20.62-77.31	0	0-0	0	0-0	0.09	0.04-0.16
Nov-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Dec-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jan-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Feb-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Mar-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Apr-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
May-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jun-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jul-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Aug-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Sep-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Oct-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Nov-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Dec-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jan-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Feb-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Mar-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Apr-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
May-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jun-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Aug-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0

Table 11.6. Little Gull design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	110.58	78.06-146.44	167.11	121.42-220.59	0.00	0-0	0.33	0.23-0.43	0.34	0.25-0.45
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	1.13	0-3.39	0.94	0-2.82	0.91	0-2.27	0.01	0-0.02	0.00	0-0.01	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.94	0-2.83	0.83	0-3.32	0.47	0-1.42	0.00	0-0.01	0.00	0-0.01	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 12.1. Mediterranean Gull design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jul-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Sep-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-18	0	0-0	10.93	0-32.79	9.98	0-29.94	0	0-0	0.03	0-0.1	0.02	0-0.06

Table 12.2. Mediterranean Gull design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-16	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jul-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Sep-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Oct-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Nov-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Dec-17	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jan-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Feb-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Mar-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Apr-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
May-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Jun-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0.00	0-0	0.00	0-0	0	0-0	0.00	0-0	0.00	0-0
Aug-18	0	0-0	10.93	0-32.79	9.98	0-29.94	0	0-0	0.03	0-0.1	0.02	0-0.06

Table 12.3. Mediterranean Gull design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-16	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jul-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Sep-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Oct-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Nov-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Dec-17	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jan-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Feb-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Mar-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Apr-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
May-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Jun-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0
Aug-18	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0	0	0-0

Table 13.1. Common Gull design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	10.41	0-26.04	10.31	0-25.77	0.00	0-0	0.03	0-0.08	0.02	0-0.05
Nov-16	6.16	0-18.47	5.95	0-23.81	5.89	0-17.66	0.03	0-0.09	0.02	0-0.07	0.01	0-0.04
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	11.58	0-28.95	11.17	0-27.91	11.06	0-27.64	0.06	0-0.14	0.03	0-0.08	0.02	0-0.06
Feb-17	37.14	12.38-68.08	35.77	11.92-65.58	41.21	17.66-70.79	0.18	0.06-0.33	0.11	0.04-0.19	0.08	0.04-0.14
Mar-17	16.24	0-37.89	26.02	5.2-52.05	25.66	5.13-51.33	0.08	0-0.18	0.08	0.02-0.15	0.05	0.01-0.1
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	8.97	0-26.92	19.68	0-49.21	17.80	0-44.5	0.04	0-0.13	0.06	0-0.15	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-37.76	20.57	0-51.44	18.55	0-46.38	0.05	0-0.18	0.06	0-0.15	0.04	0-0.09
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	19.04	0-47.59	0.00	0-0	0.00	0-0	0.04	0-0.1
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	10.22	0-30.67	18.37	0-45.94	0.00	0-0	0.03	0-0.09	0.04	0-0.09
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 13.2. Common Gull design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	25.90	14.03-43.94	20.65	10.01-38.37	0.00	0-0	0.08	0.04-0.13	0.04	0.02-0.08
Nov-16	9.15	0-27.45	9.12	1.06-24.89	7.92	1.22-21.31	0.04	0-0.13	0.03	0-0.07	0.02	0-0.04
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	12.72	0-33.58	13.02	0-29.81	12.91	0.93-31.35	0.06	0-0.16	0.04	0-0.09	0.03	0-0.06
Feb-17	37.14	12.38-68.08	35.77	11.92-65.58	41.21	17.66-70.79	0.18	0.06-0.33	0.11	0.04-0.19	0.08	0.04-0.14
Mar-17	16.24	0.6-38.49	26.56	5.75-52.59	26.08	5.96-51.74	0.08	0-0.19	0.08	0.02-0.16	0.05	0.01-0.1
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	8.97	0-29.81	19.68	0-52.5	18.92	1.12-47.86	0.04	0-0.14	0.06	0-0.15	0.04	0-0.1
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-37.76	20.57	0-51.44	19.97	0.71-49.95	0.05	0-0.18	0.06	0-0.15	0.04	0-0.1
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	19.04	0-47.59	0.00	0-0	0.00	0-0	0.04	0-0.1
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	10.39	0-31.19	18.37	0-46.31	0.00	0-0	0.03	0-0.09	0.04	0-0.09
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 13.3. Common Gull design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	10.41	0-26.04	10.31	0-25.77	0.00	0-0	0.03	0-0.08	0.02	0-0.05
Nov-16	6.16	0-18.47	5.95	0-17.86	5.89	0-17.66	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	11.58	0-28.95	11.17	0-27.91	11.06	0-27.64	0.06	0-0.14	0.03	0-0.08	0.02	0-0.06
Feb-17	30.95	6.19-61.89	29.81	5.96-59.62	35.32	11.77-64.76	0.15	0.03-0.3	0.09	0.02-0.18	0.07	0.02-0.13
Mar-17	5.41	0-16.24	10.41	0-26.02	10.27	0-25.66	0.03	0-0.08	0.03	0-0.08	0.02	0-0.05
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	19.04	0-47.59	0.00	0-0	0.00	0-0	0.04	0-0.1
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	10.22	0-30.67	18.37	0-45.94	0.00	0-0	0.03	0-0.09	0.04	0-0.09
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 13.4. Common Gull design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	10.41	0-26.04	10.31	0-25.77	0.00	0-0	0.03	0-0.08	0.02	0-0.05
Nov-16	6.16	0-18.47	5.95	0-17.86	5.89	0-18.88	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	11.58	0-28.95	11.17	0-27.91	11.98	0-30.42	0.06	0-0.14	0.03	0-0.08	0.02	0-0.06
Feb-17	30.95	6.19-61.89	29.81	5.96-59.62	35.32	11.77-64.76	0.15	0.03-0.3	0.09	0.02-0.18	0.07	0.02-0.13
Mar-17	5.41	0-16.24	10.41	0-26.02	10.27	0-25.66	0.03	0-0.08	0.03	0-0.08	0.02	0-0.05
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	19.04	0-47.59	0.00	0-0	0.00	0-0	0.04	0-0.1
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	10.22	0-30.67	18.37	0-45.94	0.00	0-0	0.03	0-0.09	0.04	0-0.09
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 13.5. Common Gull design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-24.76	5.96	0-17.88	5.89	0-17.66	0.03	0-0.12	0.02	0-0.05	0.01	0-0.04
Mar-17	10.83	0-27.07	15.61	0-36.43	15.40	0-35.93	0.05	0-0.13	0.05	0-0.11	0.03	0-0.07
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	8.97	0-26.92	19.68	0-49.21	17.80	0-44.5	0.04	0-0.13	0.06	0-0.15	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-28.32	20.57	0-51.44	18.55	0-46.38	0.05	0-0.14	0.06	0-0.15	0.04	0-0.09
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 13.6. Common Gull design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	16.45	11.61-21.78	10.98	7.75-14.86	0.00	0-0	0.05	0.03-0.06	0.02	0.02-0.03
Nov-16	4.49	0-10.47	3.17	0-7.4	2.03	0.41-4.06	0.02	0-0.05	0.01	0-0.02	0.00	0-0.01
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	2.31	0-6.93	1.85	0-5.56	1.85	0-4.64	0.01	0-0.03	0.01	0-0.02	0.00	0-0.01
Feb-17	6.19	0-24.76	5.96	0-17.88	5.89	0-17.66	0.03	0-0.12	0.02	0-0.05	0.01	0-0.04
Mar-17	10.83	0-27.66	15.61	0.54-36.43	16.22	0.82-36.75	0.05	0-0.13	0.05	0-0.11	0.03	0-0.07
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	8.97	0-29.81	19.68	0-52.5	20.04	1.12-47.86	0.04	0-0.14	0.06	0-0.15	0.04	0-0.1
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	9.44	0-28.32	20.57	0-51.44	20.68	0.71-49.93	0.05	0-0.14	0.06	0-0.15	0.04	0-0.1
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.17	0-0.69	0.19	0-0.56	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 14.1. Lesser Black-backed Gull design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	44.94	8.99-89.87	59.14	19.71-108.43	80.15	35.62-133.58	0.22	0.04-0.43	0.17	0.06-0.32	0.16	0.07-0.27
Oct-16	16.11	0-37.58	31.24	5.21-57.28	30.92	10.31-61.85	0.08	0-0.18	0.09	0.02-0.17	0.06	0.02-0.12
Nov-16	6.16	0-18.47	5.95	0-17.86	5.89	0-17.66	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Dec-16	0.00	0-0	5.89	0-17.66	5.81	0-17.42	0.00	0-0	0.02	0-0.05	0.01	0-0.04
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	5.89	0-17.66	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Mar-17	5.41	0-16.24	5.20	0-20.82	10.27	0-25.66	0.03	0-0.08	0.02	0-0.06	0.02	0-0.05
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	9.86	0-29.57	8.89	0-26.68	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	44.86	8.97-89.73	49.21	9.84-98.42	133.50	71.2-204.71	0.22	0.04-0.43	0.15	0.03-0.29	0.27	0.14-0.41
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	7.75	0-23.24	16.93	0-42.33	22.95	0-53.55	0.04	0-0.11	0.05	0-0.12	0.05	0-0.11
Oct-17	0.00	0-0	9.30	0-27.91	58.65	16.76-100.54	0.00	0-0	0.03	0-0.08	0.12	0.03-0.2
Nov-17	0.00	0-0	10.29	0-30.86	18.55	0-46.38	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	9.13	0-27.38	9.95	0-29.85	18.01	0-45.04	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Mar-18	9.72	0-29.16	10.48	0-31.43	9.40	0-28.21	0.05	0-0.14	0.03	0-0.09	0.02	0-0.06
Apr-18	0.00	0-0	0.00	0-0	9.19	0-27.56	0.00	0-0	0.00	0-0	0.02	0-0.06
May-18	0.00	0-0	0.00	0-0	8.66	0-25.99	0.00	0-0	0.00	0-0	0.02	0-0.05
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	37.39	9.35-74.78	51.27	10.25-102.55	74.24	27.84-129.93	0.18	0.04-0.36	0.15	0.03-0.3	0.15	0.06-0.26
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 14.2. Lesser Black-backed Gull design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	44.94	8.99-89.87	59.14	19.71-108.43	87.42	35.62-149.76	0.22	0.04-0.43	0.17	0.06-0.32	0.18	0.07-0.3
Oct-16	81.96	48.39-119.6	105.75	65.52-154.87	105.52	64.92-150.46	0.39	0.23-0.58	0.31	0.19-0.46	0.21	0.13-0.3
Nov-16	9.15	0-24.63	17.20	2.87-34.84	14.80	5.92-30.98	0.04	0-0.12	0.05	0.01-0.1	0.03	0.01-0.06
Dec-16	0.00	0-0	5.89	0-17.66	5.81	0-17.42	0.00	0-0	0.02	0-0.05	0.01	0-0.04
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	5.89	0-17.66	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Mar-17	5.41	0-16.24	5.20	0-20.82	11.25	0-29.74	0.03	0-0.08	0.02	0-0.06	0.02	0-0.06
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	9.86	0-29.57	8.89	0-26.68	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	44.86	8.97-89.73	49.21	9.84-98.42	133.50	71.2-204.71	0.22	0.04-0.43	0.15	0.03-0.29	0.27	0.14-0.41
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	7.75	0-23.24	16.93	0-42.33	24.62	0-56.93	0.04	0-0.11	0.05	0-0.12	0.05	0-0.11
Oct-17	0.00	0-0	9.30	0-27.91	58.65	16.76-100.54	0.00	0-0	0.03	0-0.08	0.12	0.03-0.2
Nov-17	0.00	0-0	10.29	0-40.73	19.97	0-54.4	0.00	0-0	0.03	0-0.12	0.04	0-0.11
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	9.13	0-27.38	9.95	0-29.85	24.16	3.07-54.25	0.04	0-0.13	0.03	0-0.09	0.05	0.01-0.11
Mar-18	9.72	0-29.16	12.21	0-36.68	9.40	0-31.27	0.05	0-0.14	0.04	0-0.11	0.02	0-0.06
Apr-18	0.00	0-0	0.00	0-0	11.26	1.04-34.85	0.00	0-0	0.00	0-0	0.02	0-0.07
May-18	0.00	0-0	0.00	0-0	8.66	0-25.99	0.00	0-0	0.00	0-0	0.02	0-0.05
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	37.39	9.35-74.78	51.27	10.25-102.55	74.24	27.84-129.93	0.18	0.04-0.36	0.15	0.03-0.3	0.15	0.06-0.26
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 14.3. Lesser Black-backed Gull design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-16	0.00	0-0	15.62	0-36.45	15.46	0-36.08	0.00	0-0	0.05	0-0.11	0.03	0-0.07
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	5.41	0-16.24	5.20	0-15.61	10.27	0-25.66	0.03	0-0.08	0.02	0-0.05	0.02	0-0.05
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	8.97	0-26.92	9.84	0-29.53	17.80	0-44.5	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	9.13	0-27.38	9.95	0-29.85	18.01	0-45.04	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	9.19	0-27.56	0.00	0-0	0.00	0-0	0.02	0-0.06
May-18	0.00	0-0	0.00	0-0	8.66	0-25.99	0.00	0-0	0.00	0-0	0.02	0-0.05
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	9.35	0-28.04	20.51	0-51.27	46.40	9.28-92.8	0.04	0-0.13	0.06	0-0.15	0.09	0.02-0.19
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 14.4. Lesser Black-backed Gull design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	7.28	0-21.83	0.00	0-0	0.00	0-0	0.01	0-0.04
Oct-16	0.00	0-0	15.62	0-36.45	15.46	0-36.08	0.00	0-0	0.05	0-0.11	0.03	0-0.07
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-17	5.41	0-16.24	5.20	0-15.61	10.27	0-25.66	0.03	0-0.08	0.02	0-0.05	0.02	0-0.05
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	8.97	0-26.92	9.84	0-29.53	17.80	0-44.5	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	1.67	0-5	0.00	0-0	0.00	0-0	0.00	0-0.01
Oct-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	9.13	0-27.38	9.95	0-29.85	18.01	0-45.04	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Mar-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-18	0.00	0-0	0.00	0-0	9.19	0-27.56	0.00	0-0	0.00	0-0	0.02	0-0.06
May-18	0.00	0-0	0.00	0-0	8.66	0-25.99	0.00	0-0	0.00	0-0	0.02	0-0.05
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	9.35	0-28.04	20.51	0-51.27	46.40	9.28-92.8	0.04	0-0.13	0.06	0-0.15	0.09	0.02-0.19
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 14.5. Lesser Black-backed Gull design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	44.94	8.99-89.87	59.14	19.71-108.43	80.15	35.62-133.58	0.22	0.04-0.43	0.17	0.06-0.32	0.16	0.07-0.27
Oct-16	16.11	0-37.58	15.62	0-36.45	15.46	0-36.08	0.08	0-0.18	0.05	0-0.11	0.03	0-0.07
Nov-16	6.16	0-18.47	5.95	0-17.86	5.89	0-17.66	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Dec-16	0.00	0-0	5.89	0-17.66	5.81	0-23.23	0.00	0-0	0.02	0-0.05	0.01	0-0.05
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	5.89	0-17.66	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	9.86	0-29.57	8.89	0-26.68	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	35.89	8.97-71.78	39.37	9.84-78.74	115.70	53.4-186.91	0.17	0.04-0.35	0.12	0.03-0.23	0.23	0.11-0.38
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	7.75	0-23.24	16.93	0-42.33	22.95	0-53.55	0.04	0-0.11	0.05	0-0.12	0.05	0-0.11
Oct-17	0.00	0-0	9.30	0-27.91	58.65	25.14-108.92	0.00	0-0	0.03	0-0.08	0.12	0.05-0.22
Nov-17	0.00	0-0	10.29	0-30.86	18.55	0-46.38	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	9.72	0-29.16	10.48	0-31.43	9.40	0-28.21	0.05	0-0.14	0.03	0-0.09	0.02	0-0.06
Apr-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	30.76	0-71.78	27.84	0-64.96	0.13	0-0.31	0.09	0-0.21	0.06	0-0.13
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 14.6. Lesser Black-backed Gull design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	44.94	8.99-89.87	59.14	19.71-108.43	80.15	35.62-133.58	0.22	0.04-0.43	0.17	0.06-0.32	0.16	0.07-0.27
Oct-16	80.63	47.03-118.26	90.12	54.37-134.04	90.78	53.11-132.1	0.39	0.23-0.57	0.27	0.16-0.4	0.18	0.11-0.27
Nov-16	9.21	0-24.57	17.42	2.87-35.05	14.78	4.44-32.42	0.04	0-0.12	0.05	0.01-0.1	0.03	0.01-0.07
Dec-16	0.00	0-0	5.89	0-17.66	5.81	0-23.23	0.00	0-0	0.02	0-0.05	0.01	0-0.05
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	5.89	0-17.66	0.03	0-0.09	0.02	0-0.05	0.01	0-0.04
Mar-17	0.00	0-0	0.00	0-0	2.04	0-6.11	0.00	0-0	0.00	0-0	0.00	0-0.01
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	9.86	0-29.57	8.89	0-26.68	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	35.89	8.97-71.78	39.37	9.84-78.74	106.80	53.4-186.91	0.17	0.04-0.35	0.12	0.03-0.23	0.22	0.11-0.38
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	7.75	0-23.24	16.93	0-42.33	22.95	0-53.55	0.04	0-0.11	0.05	0-0.12	0.05	0-0.11
Oct-17	0.00	0-0	9.30	0-27.91	58.65	25.14-108.92	0.00	0-0	0.03	0-0.08	0.12	0.05-0.22
Nov-17	0.00	0-0	10.29	0-40.73	21.22	0-51.79	0.00	0-0	0.03	0-0.12	0.04	0-0.1
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	6.14	0-15.36	0.00	0-0	0.00	0-0	0.01	0-0.03
Mar-18	9.72	0-29.16	10.48	0-34.9	10.93	0-31.27	0.05	0-0.14	0.03	0-0.1	0.02	0-0.06
Apr-18	0.00	0-0	0.00	0-0	3.11	0-7.26	0.00	0-0	0.00	0-0	0.01	0-0.01
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	30.76	0-71.78	27.84	0-64.96	0.13	0-0.31	0.09	0-0.21	0.06	0-0.13
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 15.1. Herring Gull design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	53.92	17.97-98.86	59.14	19.71-108.43	62.34	17.81-106.86	0.26	0.09-0.48	0.17	0.06-0.32	0.13	0.04-0.22
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	5.89	0-17.66	0.00	0-0	0.00	0-0	0.01	0-0.04
Dec-16	0.00	0-0	0.00	0-0	11.61	0-29.04	0.00	0-0	0.00	0-0	0.02	0-0.06
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	11.77	0-29.44	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Mar-17	5.41	0-16.24	5.20	0-15.61	10.27	0-25.66	0.03	0-0.08	0.02	0-0.05	0.02	0-0.05
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	9.84	0-29.53	8.90	0-26.7	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	61.98	23.24-108.46	67.73	25.4-118.53	76.50	30.6-130.04	0.30	0.11-0.52	0.20	0.07-0.35	0.15	0.06-0.26
Oct-17	0.00	0-0	9.30	0-27.91	50.27	16.76-92.17	0.00	0-0	0.03	0-0.08	0.10	0.03-0.19
Nov-17	0.00	0-0	10.29	0-30.86	37.10	9.28-74.2	0.00	0-0	0.03	0-0.09	0.07	0.02-0.15
Dec-17	0.00	0-0	0.00	0-0	8.88	0-26.64	0.00	0-0	0.00	0-0	0.02	0-0.05
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-39.8	18.01	0-45.04	0.00	0-0	0.03	0-0.12	0.04	0-0.09
Mar-18	9.72	0-29.16	20.96	0-52.39	18.80	0-47.01	0.05	0-0.14	0.06	0-0.15	0.04	0-0.09
Apr-18	0.00	0-0	20.45	0-51.11	27.56	0-64.31	0.00	0-0	0.06	0-0.15	0.06	0-0.13
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	13.84	0-34.61	15.11	0-37.77	13.74	0-34.36	0.07	0-0.17	0.04	0-0.11	0.03	0-0.07

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	30.76	0-71.78	27.84	0-55.68	0.13	0-0.31	0.09	0-0.21	0.06	0-0.11
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 15.2. Herring Gull design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	53.92	17.97-98.86	59.14	19.71-108.43	62.34	17.81-106.86	0.26	0.09-0.48	0.17	0.06-0.32	0.13	0.04-0.22
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	14.41	4.26-30.44	0.00	0-0	0.00	0-0	0.03	0.01-0.06
Dec-16	0.00	0-0	0.00	0-0	11.61	0-29.04	0.00	0-0	0.00	0-0	0.02	0-0.06
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	11.77	0-29.44	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Mar-17	5.41	0-16.24	5.20	0-15.61	11.29	0-27.72	0.03	0-0.08	0.02	0-0.05	0.02	0-0.06
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	9.84	0-29.53	8.90	0-26.7	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	61.98	23.24-108.46	67.73	25.4-118.53	79.74	38.25-133.34	0.30	0.11-0.52	0.20	0.07-0.35	0.16	0.08-0.27
Oct-17	0.00	0-0	9.30	0-27.91	50.27	16.76-92.17	0.00	0-0	0.03	0-0.08	0.10	0.03-0.19
Nov-17	0.00	0-0	13.84	0-37.97	42.36	9.28-84.72	0.00	0-0	0.04	0-0.11	0.09	0.02-0.17
Dec-17	0.00	0-0	0.00	0-0	8.88	0-26.64	0.00	0-0	0.00	0-0	0.02	0-0.05
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-39.8	23.98	2.99-54.02	0.00	0-0	0.03	0-0.12	0.05	0.01-0.11
Mar-18	9.72	0-29.16	24.37	0-55.81	18.80	0-50.1	0.05	0-0.14	0.07	0-0.16	0.04	0-0.1
Apr-18	0.00	0-0	25.61	0-61.34	33.70	9.19-73.51	0.00	0-0	0.08	0-0.18	0.07	0.02-0.15
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	13.84	0-34.61	15.11	0-37.77	13.74	0-34.36	0.07	0-0.17	0.04	0-0.11	0.03	0-0.07

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	30.76	0-71.78	27.84	0-55.68	0.13	0-0.31	0.09	0-0.21	0.06	0-0.11
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 15.3. Herring Gull design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Oct-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Nov-16	0	0-0	0	0-0	5.89	0-17.66	0	0-0	0	0-0	0.01	0-0.04
Dec-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jan-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Feb-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Mar-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Apr-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
May-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jun-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jul-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Aug-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Sep-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Oct-17	0	0-0	0	0-0	8.38	0-25.14	0	0-0	0	0-0	0.02	0-0.05
Nov-17	0	0-0	0	0-0	9.28	0-28.06	0	0-0	0	0-0	0.02	0-0.06
Dec-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jan-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Feb-18	0	0-0	0	0-0	9.01	0-27.02	0	0-0	0	0-0	0.02	0-0.05
Mar-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Apr-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
May-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jun-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Aug-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0

Table 15.4. Herring Gull design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Oct-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Nov-16	0	0-0	0	0-0	5.89	0-17.66	0	0-0	0	0-0	0.01	0-0.04
Dec-16	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jan-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Feb-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Mar-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Apr-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
May-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jun-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jul-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Aug-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Sep-17	0	0-0	0	0-0	5.45	0-16.34	0	0-0	0	0-0	0.01	0-0.03
Oct-17	0	0-0	0	0-0	8.38	0-25.14	0	0-0	0	0-0	0.02	0-0.05
Nov-17	0	0-0	0	0-0	9.28	0-28.06	0	0-0	0	0-0	0.02	0-0.06
Dec-17	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jan-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Feb-18	0	0-0	0	0-0	9.01	0-27.02	0	0-0	0	0-0	0.02	0-0.05
Mar-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Apr-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
May-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Jun-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0

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Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0
Aug-18	0	0-0	0	0-0	0.00	0-0	0	0-0	0	0-0	0.00	0-0

Table 15.5. Herring Gull design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	53.92	17.97-98.86	59.14	9.86-108.43	62.34	17.81-106.86	0.26	0.09-0.48	0.17	0.03-0.32	0.13	0.04-0.22
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	0.00	0-0	0.00	0-0	11.61	0-29.04	0.00	0-0	0.00	0-0	0.02	0-0.06
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	11.77	0-29.44	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Mar-17	5.41	0-16.24	5.20	0-20.82	10.27	0-25.66	0.03	0-0.08	0.02	0-0.06	0.02	0-0.05
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	9.84	0-29.53	8.90	0-26.7	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	61.98	23.24-108.46	67.73	25.4-118.53	76.50	30.6-130.04	0.30	0.11-0.52	0.20	0.07-0.35	0.15	0.06-0.26
Oct-17	0.00	0-0	9.30	0-37.22	41.89	8.38-83.79	0.00	0-0	0.03	0-0.11	0.08	0.02-0.17
Nov-17	0.00	0-0	10.29	0-30.86	27.83	0-64.93	0.00	0-0	0.03	0-0.09	0.06	0-0.13
Dec-17	0.00	0-0	0.00	0-0	8.88	0-35.52	0.00	0-0	0.00	0-0	0.02	0-0.07
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-29.85	9.01	0-27.02	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Mar-18	9.72	0-38.88	20.96	0-52.39	18.80	0-47.01	0.05	0-0.19	0.06	0-0.15	0.04	0-0.09
Apr-18	0.00	0-0	20.45	0-51.11	27.56	0-64.31	0.00	0-0	0.06	0-0.15	0.06	0-0.13
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	13.84	0-34.61	15.11	0-37.77	13.74	0-34.36	0.07	0-0.17	0.04	0-0.11	0.03	0-0.07

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	30.76	0-61.78	27.84	0-64.96	0.13	0-0.31	0.09	0-0.18	0.06	0-0.13
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 15.6. Herring Gull design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	53.92	17.97-98.86	59.14	9.86-108.43	62.34	17.81-106.86	0.26	0.09-0.48	0.17	0.03-0.32	0.13	0.04-0.22
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	0.00	0-0	0.00	0-0	9.94	2.84-18.46	0.00	0-0	0.00	0-0	0.02	0.01-0.04
Dec-16	0.00	0-0	0.00	0-0	11.61	0-29.04	0.00	0-0	0.00	0-0	0.02	0-0.06
Jan-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-17	6.19	0-18.57	5.96	0-17.88	11.77	0-29.44	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Mar-17	5.41	0-16.24	5.20	0-20.82	12.32	0-28.77	0.03	0-0.08	0.02	0-0.06	0.02	0-0.06
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	9.84	0-29.53	8.90	0-26.7	0.00	0-0	0.03	0-0.09	0.02	0-0.05
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	61.98	23.24-108.46	67.73	25.4-118.53	76.50	30.6-130.04	0.30	0.11-0.52	0.20	0.07-0.35	0.15	0.06-0.26
Oct-17	0.00	0-0	9.30	0-37.22	41.89	8.38-83.79	0.00	0-0	0.03	0-0.11	0.08	0.02-0.17
Nov-17	0.00	0-0	13.84	0-37.97	33.08	5.26-70.18	0.00	0-0	0.04	0-0.11	0.07	0.01-0.14
Dec-17	0.00	0-0	0.00	0-0	8.88	0-35.52	0.00	0-0	0.00	0-0	0.02	0-0.07
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-29.85	12.00	0-39.02	0.00	0-0	0.03	0-0.09	0.02	0-0.08
Mar-18	9.72	0-38.88	20.96	0-59.01	21.89	0-53.18	0.05	0-0.19	0.06	0-0.17	0.04	0-0.11
Apr-18	0.00	0-0	25.61	0-61.44	36.76	9.19-73.51	0.00	0-0	0.08	0-0.18	0.07	0.02-0.15
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	13.84	0-34.61	15.11	0-37.77	13.74	0-34.36	0.07	0-0.17	0.04	0-0.11	0.03	0-0.07

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	30.76	0-61.78	27.84	0-64.96	0.13	0-0.31	0.09	0-0.18	0.06	0-0.13
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 16.1. Great Black-backed Gull design based estimates of birds in flight and on sea.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	17.81	0-44.53	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Oct-16	5.37	0-21.48	5.21	0-15.62	5.15	0-15.46	0.03	0-0.1	0.02	0-0.05	0.01	0-0.03
Nov-16	6.16	0-18.47	5.95	0-17.86	11.77	0-29.43	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Dec-16	12.31	0-30.79	17.66	0-41.21	17.42	0-40.65	0.06	0-0.15	0.05	0-0.12	0.04	0-0.08
Jan-17	5.79	0-17.37	11.17	0-28.05	38.69	11.06-71.86	0.03	0-0.08	0.03	0-0.08	0.08	0.02-0.15
Feb-17	61.89	24.76-99.19	95.38	53.65-143.08	141.29	94.19-200.16	0.30	0.12-0.48	0.28	0.16-0.42	0.29	0.19-0.4
Mar-17	5.41	0-16.24	5.20	0-15.61	5.13	0-15.4	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	17.95	0-44.86	19.68	0-49.21	17.80	0-44.5	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	8.47	0-25.4	7.65	0-22.95	0.00	0-0	0.02	0-0.07	0.02	0-0.05
Oct-17	8.49	0-25.48	9.30	0-27.91	67.03	25.14-117.3	0.04	0-0.12	0.03	0-0.08	0.14	0.05-0.24
Nov-17	9.44	0-28.32	10.29	0-30.86	9.28	0-27.83	0.05	0-0.14	0.03	0-0.09	0.02	0-0.06
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-29.85	18.01	0-45.04	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Mar-18	9.72	0-29.16	31.43	0-73.34	28.21	0-65.81	0.05	0-0.14	0.09	0-0.22	0.06	0-0.13
Apr-18	18.76	0-46.89	20.45	0-51.11	45.94	9.19-91.87	0.09	0-0.23	0.06	0-0.15	0.09	0.02-0.19
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	20.61	0-41.23	0.00	0-0	0.00	0-0	0.04	0-0.08

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-56.09	41.02	10.25-82.04	37.12	9.28-74.24	0.13	0-0.27	0.12	0.03-0.24	0.07	0.02-0.15
Aug-18	0.00	0-0	0.00	0-0	9.98	0-29.94	0.00	0-0	0.00	0-0	0.02	0-0.06

Table 16.2. Great Black-backed Gull design based estimates of birds in flight and on sea including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	17.81	0-46.15	0.04	0-0.13	0.03	0-0.09	0.04	0-0.09
Oct-16	26.74	13.36-41.52	17.01	8.11-31.22	16.74	8.69-30.66	0.13	0.06-0.2	0.05	0.02-0.09	0.03	0.02-0.06
Nov-16	9.27	0-24.69	18.08	3.09-36.59	32.59	14.84-56.38	0.04	0-0.12	0.05	0.01-0.11	0.07	0.03-0.11
Dec-16	12.31	0-30.79	17.66	0-41.21	17.42	0-40.65	0.06	0-0.15	0.05	0-0.12	0.04	0-0.08
Jan-17	5.79	0-17.37	11.17	0-28.05	38.69	11.06-71.86	0.03	0-0.08	0.03	0-0.08	0.08	0.02-0.15
Feb-17	61.89	24.76-99.19	95.38	53.65-143.08	141.29	94.19-200.16	0.30	0.12-0.48	0.28	0.16-0.42	0.29	0.19-0.4
Mar-17	5.41	0-16.24	5.20	0-15.61	5.13	0-18.55	0.03	0-0.08	0.02	0-0.05	0.01	0-0.04
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	17.95	0-44.86	19.68	0-49.21	17.80	0-44.5	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	8.47	0-25.4	7.65	0-24.56	0.00	0-0	0.02	0-0.07	0.02	0-0.05
Oct-17	8.49	0-25.48	9.30	0-27.91	67.03	25.14-117.3	0.04	0-0.12	0.03	0-0.08	0.14	0.05-0.24
Nov-17	9.44	0-28.32	13.73	0-37.75	10.62	0-30.55	0.05	0-0.14	0.04	0-0.11	0.02	0-0.06
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-29.85	20.96	2.94-50.92	0.00	0-0	0.03	0-0.09	0.04	0.01-0.1
Mar-18	9.72	0-29.16	36.76	5.32-78.96	32.99	4.78-70.59	0.05	0-0.14	0.11	0.02-0.23	0.07	0.01-0.14
Apr-18	28.14	0-65.65	25.50	0-56.17	58.08	19.36-107.13	0.14	0-0.32	0.08	0-0.17	0.12	0.04-0.22
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	20.61	0-41.23	0.00	0-0	0.00	0-0	0.04	0-0.08

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-56.09	41.02	10.25-82.04	37.12	9.28-74.24	0.13	0-0.27	0.12	0.03-0.24	0.07	0.02-0.15
Aug-18	0.00	0-0	0.00	0-0	9.98	0-29.94	0.00	0-0	0.00	0-0	0.02	0-0.06

Table 16.3. Great Black-backed Gull design based estimates of birds in flight.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	8.91	0-26.72	0.00	0-0	0.00	0-0	0.02	0-0.05
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	6.16	0-18.47	5.95	0-17.86	11.77	0-29.43	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	11.06	0-27.64	0.00	0-0	0.00	0-0	0.02	0-0.06
Feb-17	18.57	0-43.33	23.85	5.96-47.69	23.55	5.89-47.24	0.09	0-0.21	0.07	0.02-0.14	0.05	0.01-0.1
Mar-17	5.41	0-16.24	5.20	0-15.61	5.13	0-15.4	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	58.65	16.76-100.54	0.00	0-0	0.00	0-0	0.12	0.03-0.2
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-29.85	18.01	0-45.04	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Mar-18	9.72	0-29.16	20.96	0-52.39	18.80	0-47.01	0.05	0-0.14	0.06	0-0.15	0.04	0-0.09
Apr-18	18.76	0-46.89	20.45	0-51.11	36.75	9.19-73.5	0.09	0-0.23	0.06	0-0.15	0.07	0.02-0.15
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	20.61	0-48.1	0.00	0-0	0.00	0-0	0.04	0-0.1

East Anglia ONE North Technical Appendix 12.2 Offshore Ornithology Annex 2 - Survey Abundance

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	41.02	10.25-82.04	37.12	9.28-74.24	0.13	0-0.31	0.12	0.03-0.24	0.07	0.02-0.15
Aug-18	0.00	0-0	0.00	0-0	9.98	0-29.94	0.00	0-0	0.00	0-0	0.02	0-0.06

Table 16.4. Great Black-backed Gull design based estimates of birds in flight including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	0.00	0-0	0.00	0-0	10.53	0-29.97	0.00	0-0	0.00	0-0	0.02	0-0.06
Oct-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Nov-16	6.16	0-18.47	5.95	0-17.86	11.77	0-29.43	0.03	0-0.09	0.02	0-0.05	0.02	0-0.06
Dec-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-17	0.00	0-0	0.00	0-0	11.06	0-27.64	0.00	0-0	0.00	0-0	0.02	0-0.06
Feb-17	18.57	0-43.33	23.85	5.96-47.69	23.55	5.89-47.24	0.09	0-0.21	0.07	0.02-0.14	0.05	0.01-0.1
Mar-17	5.41	0-16.24	5.20	0-15.61	5.13	0-15.4	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	0.00	0-0	0.53	0-1.6	0.00	0-0	0.00	0-0	0.00	0-0
Oct-17	0.00	0-0	0.00	0-0	58.65	16.76-100.54	0.00	0-0	0.00	0-0	0.12	0.03-0.2
Nov-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	9.95	0-29.85	18.01	0-45.04	0.00	0-0	0.03	0-0.09	0.04	0-0.09
Mar-18	9.72	0-29.16	20.96	0-52.39	18.80	0-47.01	0.05	0-0.14	0.06	0-0.15	0.04	0-0.09
Apr-18	18.76	0-46.89	20.45	0-51.11	36.75	9.19-73.5	0.09	0-0.23	0.06	0-0.15	0.07	0.02-0.15
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	20.61	0-48.1	0.00	0-0	0.00	0-0	0.04	0-0.1

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	28.04	0-65.43	41.02	10.25-82.04	37.12	9.28-74.24	0.13	0-0.31	0.12	0.03-0.24	0.07	0.02-0.15
Aug-18	0.00	0-0	0.00	0-0	9.98	0-29.94	0.00	0-0	0.00	0-0	0.02	0-0.06

Table 16.5. Great Black-backed Gull design based estimates of birds on the sea surface.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	8.91	0-26.72	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Oct-16	5.37	0-16.11	5.21	0-15.75	5.15	0-15.46	0.03	0-0.08	0.02	0-0.05	0.01	0-0.03
Nov-16	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Dec-16	12.31	0-30.79	17.66	0-41.21	17.42	0-40.65	0.06	0-0.15	0.05	0-0.12	0.04	0-0.08
Jan-17	5.79	0-17.37	11.17	0-27.91	27.64	5.53-55.28	0.03	0-0.08	0.03	0-0.08	0.06	0.01-0.11
Feb-17	43.33	18.57-74.43	71.54	29.81-113.27	117.74	70.64-170.73	0.21	0.09-0.36	0.21	0.09-0.33	0.24	0.14-0.34
Mar-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	17.95	0-44.86	19.68	0-49.21	17.80	0-44.5	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	8.47	0-25.4	7.65	0-22.95	0.00	0-0	0.02	0-0.07	0.02	0-0.05
Oct-17	8.49	0-25.48	9.30	0-27.91	8.38	0-25.14	0.04	0-0.12	0.03	0-0.08	0.02	0-0.05
Nov-17	9.44	0-28.32	10.29	0-30.86	9.28	0-27.83	0.05	0-0.14	0.03	0-0.09	0.02	0-0.06
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Mar-18	0.00	0-0	10.48	0-31.43	9.40	0-28.21	0.00	0-0	0.03	0-0.09	0.02	0-0.06
Apr-18	0.00	0-0	0.00	0-0	9.19	0-27.56	0.00	0-0	0.00	0-0	0.02	0-0.06
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Table 16.6. Great Black-backed Gull design based estimates of birds on the sea surface including unidentified birds assigned using positively identified proportions.

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Sep-16	8.99	0-26.96	9.86	0-29.57	8.91	0-26.72	0.04	0-0.13	0.03	0-0.09	0.02	0-0.05
Oct-16	26.72	13.36-42.83	16.97	8.11-31.85	16.74	7.96-30.76	0.13	0.06-0.21	0.05	0.02-0.09	0.03	0.02-0.06
Nov-16	3.11	0-9.32	12.34	3.09-24.69	20.90	5.97-38.81	0.01	0-0.04	0.04	0.01-0.07	0.04	0.01-0.08
Dec-16	12.31	0-30.79	17.66	0-41.21	17.42	0-40.65	0.06	0-0.15	0.05	0-0.12	0.04	0-0.08
Jan-17	5.79	0-17.37	11.17	0-27.91	27.64	5.53-55.28	0.03	0-0.08	0.03	0-0.08	0.06	0.01-0.11
Feb-17	43.33	18.57-74.43	71.54	29.81-113.27	117.74	70.64-170.73	0.21	0.09-0.36	0.21	0.09-0.33	0.24	0.14-0.34
Mar-17	0.00	0-0	0.00	0-0	1.04	0-3.13	0.00	0-0	0.00	0-0	0.00	0-0.01
Apr-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
May-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jul-17	17.95	0-44.86	19.68	0-49.21	17.80	0-44.5	0.09	0-0.22	0.06	0-0.15	0.04	0-0.09
Aug-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Sep-17	0.00	0-0	8.47	0-25.4	7.65	0-22.95	0.00	0-0	0.02	0-0.07	0.02	0-0.05
Oct-17	8.49	0-25.48	9.30	0-27.91	8.38	0-25.14	0.04	0-0.12	0.03	0-0.08	0.02	0-0.05
Nov-17	9.44	0-28.32	13.73	0-41.15	10.62	0-30.52	0.05	0-0.14	0.04	0-0.12	0.02	0-0.06
Dec-17	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jan-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Feb-18	0.00	0-0	0.00	0-0	5.88	0-14.71	0.00	0-0	0.00	0-0	0.01	0-0.03
Mar-18	0.00	0-0	15.80	0-41.91	14.18	0-37.77	0.00	0-0	0.05	0-0.12	0.03	0-0.08
Apr-18	9.38	0-28.37	5.06	0-15.17	24.44	5.09-52.99	0.05	0-0.14	0.01	0-0.04	0.05	0.01-0.11
May-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Jun-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0

Date	Abundance						Density					
	Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer		Wind farm		Wind farm & 2km buffer		Wind farm & 4km buffer	
	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval	Median	Confidence interval
Jul-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0
Aug-18	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0	0.00	0-0



East Anglia ONE North Wind Farm

Appendix 12.2

Ornithology Technical Appendix

Annex 3

Collision risk model input parameters

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1 INTRODUCTION

1. This appendix provides tables of the input parameters for East Anglia ONE North used in the collision risk modelling, comprising the following tables.

- Table 1: density of birds in flight in East Anglia ONE North in each month, presented as the mean and upper and lower 95% confidence range derived from 1,000 nonparametric bootstrap simulations (the monthly values were derived as the mean of two months of survey density);
- Table 2: the proportion of each species estimated to be at rotor height ($\geq 24\text{m}$) from the survey data and the sample sizes available (for use in Band Option 1 modelling);
- Table 3: the proportion of each species estimated to be at rotor height ($\geq 24\text{m}$) derived from Johnston et al. 2014¹ (this corresponds to the proportion at rotor height used in Band Option 2 modelling);
- Table 4: biometrics of each species modelled (e.g. wingspan, body length, etc.), and;
- Table 5: the wind farm and turbine data.

2. For the avoidance of doubt, the avoidance rates used were those advised by Natural England, as follows:

- | | |
|---|-------------------|
| • Gannet | 98.9% (SD = 0.2%) |
| • Kittiwake | 98.9% (SD = 0.2%) |
| • Lesser black-backed gull, great black-backed gull | 99.5% (SD = 0.1%) |
| • Little gull, common gull, black-headed gull | 99.2% (SD = 0.2%) |
| • All other species | 98% (SD = 0.2%) |

3. Nocturnal Activity Factors (NAF) used for CRM were those advised by Natural England; these factors were derived from reviews of seabird activity reported in Garthe and Hüppop (2004)² which ranked species from 1 to 5 (1 low, 5 high) for relative nocturnal activity. These rates were subsequently modified for the purposes of CRM into 1 = 0%, 2 = 25%, 3 = 50%, 4 = 75% and 5 = 100% flying activity at night. Standard and reduced NAF were used for gannet (25% and 0%), kittiwake, lesser black-backed gull, herring gull and great black-backed gull (50% and 25% for all).

¹ Johnston, A., Cook, A.S.C.P., Wright, L.J., Humphreys, E.M. & Burton, E.H.K. (2014). Modelling flight heights of marine birds to more accurately assess collision risk with offshore wind turbines. *Journal of Applied Ecology*, 51, 31-41.

² Garthe, S & Hüppop, O. (2004). Scaling possible adverse effects of marine wind farms on seabirds: developing and applying a vulnerability index. *Journal of Applied Ecology*, 41, 724-734.

In addition, evidence based nocturnal activity rates were used for gannet (Furness et al. 2018³) during the breeding season (8% between March and September) and nonbreeding season (4% during the nonbreeding season between October and February). Unless otherwise stated the higher NAF rates were used for each species.

³ Furness, R.W., Garthe, S., Trinder, M., Matthiopoulos, J., Wanless, S. & Jeglinski, J. (2018). Nocturnal flight activity of northern gannets *Morus bassanus* and implications for modelling collision risk at offshore wind farms. *Environmental Impact Assessment Review*, 73, <https://doi.org/10.1016/j.eiar.2018.06.006>

Table 1. East Anglia ONE North monthly mean densities (and 95% confidence intervals) of birds in flight used in the collision risk modelling.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Red-throated Diver	0 (0-0)	0.02 (0-0.07)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)
Fulmar	0 (0-0)	0.07 (0-0.17)	0.09 (0.01-0.19)	0.04 (0-0.13)	0 (0-0)	0.05 (0-0.12)	0.02 (0-0.06)	0.04 (0-0.1)	0 (0-0)	0.32 (0.21-0.45)	0.07 (0-0.16)	0.04 (0-0.11)
Gannet	0 (0-0)	0.06 (0-0.15)	0.13 (0.02-0.27)	0.22 (0.09-0.4)	0 (0-0)	0.06 (0-0.16)	0.15 (0.02-0.33)	0.13 (0.04-0.23)	0.04 (0-0.09)	0.18 (0.04-0.36)	0.67 (0.41-0.97)	0.03 (0-0.07)
Kittiwake	0.04 (0-0.11)	0.21 (0.06-0.39)	0.41 (0.2-0.65)	0.87 (0.56-1.25)	0.6 (0.39-0.83)	0.24 (0.07-0.46)	0.09 (0.02-0.17)	0.12 (0.02-0.26)	0.02 (0-0.06)	0.04 (0-0.09)	0.26 (0.11-0.45)	0.27 (0.13-0.48)
Black-headed Gull	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.02 (0-0.07)	0 (0-0)
Little Gull	0.01 (0-0.04)	0 (0-0)	0 (0-0)	0.09 (0.02-0.18)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)
Common Gull	0.03 (0-0.07)	0.07 (0.01-0.15)	0.01 (0-0.04)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.01 (0-0.04)	0 (0-0)
Lesser Black-backed Gull	0 (0-0)	0.02 (0-0.07)	0.01 (0-0.04)	0 (0-0)	0 (0-0)	0 (0-0)	0.04 (0-0.13)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)
Great Black-backed Gull	0 (0-0)	0.04 (0-0.1)	0.04 (0-0.11)	0.05 (0-0.11)	0 (0-0)	0 (0-0)	0.07 (0-0.16)	0 (0-0)	0 (0-0)	0 (0-0)	0.01 (0-0.04)	0 (0-0)
Sandwich tern	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.02 (0-0.06)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)

Table 2. Proportions of birds at potential collision height ($\geq 24\text{m}$) derived from the survey data for East Anglia ONE North. Figures present total number of birds with an estimated flight height, number at collision height ($\geq 24\text{m}$) and proportion at collision height. Figures are provided for all birds within the wind farm for use in Band Option 1 modelling.

Species	Within 4km buffer			Within wind farm		
	No. height estimates	No. $\geq 24\text{m}$	Proportion $\geq 24\text{m}$	No. height estimates	No. $\geq 24\text{m}$	Proportion $\geq 24\text{m}$
Red-throated Diver	0	0	0.000	0	0	0.000
Fulmar	108	25	0.231	28	7	0.250
Gannet	147	44	0.299	49	14	0.286
Kittiwake	281	149	0.530	111	63	0.568
Black-headed Gull	14	2	0.143	1	0	0.000
Little Gull	16	8	0.500	5	2	0.400
Common Gull	15	11	0.733	7	5	0.714
Lesser Black-backed Gull	15	8	0.533	4	3	0.750
Great Black-backed Gull	28	12	0.429	5	4	0.800
Sandwich tern	6	6	1.000	1	1	1.000

Table 3. Proportions at collision height ($\geq 22\text{m}$) from Johnston et al. (2014).

Species	Proportion at collision height ($\geq 24\text{m}$)
Red-throated Diver	0.041
Fulmar	0.006
Gannet	0.102
Kittiwake	0.124
Black-headed Gull	0.114
Little Gull	0.125
Common Gull	0.188
Lesser Black-backed Gull	0.249
Great Black-backed Gull	0.291
Sandwich tern	0.054

Table 4. Species biometrics used in the collision risk modelling. Note that for stochastic simulations, random variation was included for gannet and kittiwake using the estimated variance on the rates (see Technical Appendix 13.1, section 4.7 for details) and for the large gull species, in stochastic simulations nocturnal activity was modelled as a binary variable randomly selected as either 0.25 or 0.5 in each simulation.

Species	Body length (m)	Wingspan (m)	Flight speed (m/s)	Nocturnal activity factor				Flight type (flapping=0, gliding=1)
				Standard	Reduced	Ev. BR*	Ev.NB**	
Red-throated Diver	0.73	1.30	17.0	0.50	-	-	-	0
Fulmar	0.48	1.07	13.0	0.75	-	-	-	0
Gannet	0.94	1.72	14.9	0.25	0.00	0.08	0.04	0
Kittiwake	0.39	1.08	13.1	0.50	0.25	-	-	0
Black-headed Gull	0.37	1.10	11.9	0.50	-	-	-	0
Little Gull	0.26	0.78	12.2	0.25	-	-	-	0
Common Gull	0.42	1.30	13.4	0.50	-	-	-	0
Lesser Black-backed Gull	0.58	1.42	13.1	0.50	0.25	-	-	0
Great Black-backed Gull	0.71	1.58	13.7	0.50	0.25	-	-	0
Sandwich tern	0.39	1	10.5	-	-	-	-	0

*Ev. BR: Evidence based nocturnal activity factor for gannet is based on 8% flying activity at night during the breeding season (March to September) from Furness et al. (2018).

**Ev. NB: Evidence based nocturnal activity factor for gannet is based on 4% flying activity at night during the nonbreeding season (October to February) from Furness et al. (2018).

Table 5. Wind farm and turbine specifications used in the collision risk modelling.

Turbine Model	No. of rotor blades	RPM	Rotor radius (m)	Hub height above HAT (m)	Predicted operation time (%)	Max. blade width (m)	Mean blade pitch (deg.)	No. of turbines	Latitude	Wind farm width (km)
250m	3	7.8	110	134.44	0.94	7	15	67	52.385	19.5
300m	3	7.3	125	149.44	0.94	9	15	53	52.385	19.5



East Anglia ONE North Offshore Wind Farm

Appendix 12.2

Offshore Ornithology

Annex 4

Seabird collision risk modelling results

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1 INTRODUCTION

1. This appendix provides results of collision risk modelling (CRM) for the East Anglia ONE North wind farm.
2. Collision mortality estimates are presented for each month and summed across the year, produced using the Band CRM (2012) option 2 (generic flight heights) and option 1 (site-based flight heights).
3. Modelling is presented for all the turbine options under consideration: 250 and 300m blade tip height.
4. The Band (2012) deterministic CRM was used to produce monthly collision mortality estimates using the mean density and upper and lower 95% confidence intervals. Annual totals were calculated as the sum of the monthly values.
5. The input parameter values are provided in Technical Appendix 12.2 Annex 3.
6. Table A4 provides a key to table contents.

Table A4. Key to collision mortality output table numbers, for all combinations of turbine model and input parameters.

Species	Band option	Turbine Model	
		250m	300m
Red-throated diver	2	1	11
Fulmar		2	12
Gannet		3	13
Kittiwake		4	14
Black-headed gull		5	15
Little gull		6	16
Common gull		7	17
Lesser black-backed gull		8	18
Great black-backed gull		9	19
Sandwich tern		10	20
All species	1	31	32

Table 1. Red-throated diver collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0	0.3	0	0	0	0	0	0	0	0	0	0	0.3
95% c.i.	0-0	0-0.89	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.89
Variables													
PCH (95% c.i.)	0-0	0.06-2.32	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.06-2.32

Table 2. Fulmar collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0	0.11	0.16	0.07	0	0.09	0.04	0.07	0	0.57	0.11	0.06	1.29
95% c.i.	0-0	0-0.27	0.02-0.34	0-0.22	0-0	0-0.21	0-0.12	0-0.18	0-0	0.37-0.8	0-0.26	0-0.19	0.39-2.59
Variables													
PCH (95% c.i.)	0-0	0-1.34	0-2.02	0-0.95	0-0	0-1.17	0-0.52	0-0.9	0-0	0-7.26	0-1.43	0-0.79	0-16.38

Table 3. Gannet collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0.81	2.19	4.01	0	1.24	3.19	2.58	0.64	2.89	9.32	0.4	27.27
95% c.i.		0-0	0-2.12	0.39-4.61	1.63-7.15	0-0	0-3.27	0.46-6.84	0.74-4.42	0-1.59	0.65-5.67	5.66-13.5	0-1	9.53-50.17
Variables														
Avoidance rate (95% c.i.)		0-0	0.66-0.96	1.79-2.59	3.28-4.74	0-0	1.02-1.47	2.61-3.77	2.11-3.05	0.52-0.75	2.37-3.42	7.63-11.02	0.33-0.47	22.31-32.23
PCH (95% c.i.)		0-0	0.35-1.41	0.95-3.84	1.75-7.01	0-0	0.54-2.17	1.39-5.58	1.12-4.51	0.28-1.11	1.26-5.06	4.06-16.31	0.17-0.7	11.87-47.71
NAF (Mean ± 95% c.i.)	Reduced (0%)	0 (0-0)	0.6 (0-1.56)	1.74 (0.31-3.66)	3.39 (1.37-6.05)	0 (0-0)	1.12 (0-2.95)	2.85 (0.41-6.11)	2.22 (0.64-3.81)	0.52 (0-1.3)	2.21 (0.5-4.32)	6.53 (3.96-9.46)	0.26 (0-0.66)	21.45 (7.2-39.89)
	Evidence based*	0 (0-0)	0.63 (0-1.65)	1.89 (0.34-3.96)	3.59 (1.45-6.4)	0 (0-0)	1.16 (0-3.05)	2.96 (0.43-6.34)	2.34 (0.67-4.01)	0.56 (0-1.39)	2.32 (0.52-4.54)	6.98 (4.23-10.11)	0.28 (0-0.71)	22.7 (7.65-42.17)

*Evidence based mean for gannet is based on 8% flying activity at night during the breeding season (March to September) and 4% flying activity at night during the nonbreeding season (October to February).

Table 4. Kittiwake collision mortality for the 250m turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0.61	3.19	7.34	16.17	12.04	4.86	1.75	2.33	0.39	0.68	4.25	4.4	57.99
95% c.i.		0-1.82	0.91-6.03	3.58-11.76	10.28-23.23	7.89-16.61	1.43-9.05	0.44-3.51	0.37-5.14	0-1.16	0-1.58	1.82-7.28	2.08-7.64	28.81-94.82
Variables														
Avoidance rate (95% c.i.)		0.5-0.72	2.61-3.76	6.01-8.68	13.23-19.1	9.85-14.23	3.97-5.74	1.44-2.07	1.91-2.76	0.32-0.46	0.56-0.8	3.48-5.02	3.6-5.19	47.45-68.54
PCH (95% c.i.)		0.45-0.73	2.36-3.84	5.44-8.85	11.98-19.49	8.92-14.52	3.6-5.86	1.3-2.12	1.73-2.81	0.29-0.47	0.5-0.82	3.15-5.12	3.26-5.3	42.97-69.94
NAF (Mean ± 95% c.i.)	Reduced (25%)	0.46 (0-1.38)	2.52 (0.72-4.77)	6.09 (2.97-9.77)	14 (8.91-20.13)	10.78 (7.06-14.86)	4.42 (1.31-8.23)	1.59 (0.4-3.17)	2.05 (0.33-4.52)	0.33 (0-0.99)	0.55 (0-1.28)	3.27 (1.4-5.6)	3.28 (1.55-5.7)	49.34 (24.64-80.4)

Table 5. Black-headed gull collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate and Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0	0	0	0	0	0	0	0	0	0.23	0	0.23
95% c.i.		0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.69	0-0	0-0.69
Variables														
Avoidance rate (95% c.i.)		0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.2-0.26	0-0	0.2-0.26
PCH (95% c.i.)		0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.08-0.49	0-0	0.08-0.49

Table 6. Little gull collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate and Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0.11	0	0	0.94	0	0	0	0	0	0	0	0	1.05
95% c.i.	0-0.34	0-0	0-0	0.24-1.88	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.24-2.22
Variables													
Avoidance rate (95% c.i.)	0.1-0.13	0-0	0-0	0.82-1.06	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.92-1.19
PCH (95% c.i.)	0.03-0.23	0-0	0-0	0.29-1.95	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.32-2.18

Table 7. Common gull collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate and Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0.54	1.36	0.28	0	0	0	0	0	0	0	0.28	0	2.47
95% c.i.	0-1.35	0.27-2.73	0-0.84	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.85	0-0	0.27-5.76
Variables													
Avoidance rate (95% c.i.)	0.47-0.61	1.19-1.54	0.24-0.31	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.25-0.32	0-0	2.16-2.77
PCH (95% c.i.)	0.45-0.81	1.14-2.06	0.23-0.42	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.24-0.43	0-0	2.06-3.72

Table 8. Lesser black-backed gull collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0.36	0.25	0	0	0	0.95	0	0	0	0	0	1.56
95% c.i.		0-0	0-1.08	0-0.75	0-0	0-0	0-0	0-2.85	0-0	0-0	0-0	0-0	0-0	0-4.69
Variables														
Avoidance rate (95% c.i.)		0-0	0.24-0.61	0.17-0.43	0-0	0-0	0-0	0.64-1.62	0-0	0-0	0-0	0-0	0-0	1.05-2.66
PCH (95% c.i.)		0-0	0.24-0.61	0.17-0.43	0-0	0-0	0-0	0.64-1.62	0-0	0-0	0-0	0-0	0-0	1.05-2.66
NAF (Mean ± 95% c.i.)	Reduced (25%)	0 (0-0)	0.29 (0-0.86)	0.21 (0-0.62)	0 (0-0)	0 (0-0)	0 (0-0)	0.86 (0-2.58)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	1.35 (0-4.06)

Table 9. Great black-backed gull collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0.95	0.9	1.14	0	0	1.88	0	0	0	0.33	0	5.2
95% c.i.		0-0	0-2.21	0-2.71	0-2.86	0-0	0-0	0-4.38	0-0	0-0	0-0	0-0.98	0-0	0-13.13
Variables														
Avoidance rate (95% c.i.)		0-0	0.76-1.13	0.72-1.08	0.92-1.37	0-0	0-0	1.5-2.25	0-0	0-0	0-0	0.26-0.39	0-0	4.16-6.23
PCH (95% c.i.)		0-0	0.79-1.4	0.76-1.34	0.96-1.69	0-0	0-0	1.57-2.78	0-0	0-0	0-0	0.27-0.48	0-0	4.36-7.69
NAF (Mean ± 95% c.i.)	Reduced (25%)	0 (0-0)	0.75 (0-1.75)	0.75 (0-2.25)	0.99 (0-2.48)	0 (0-0)	0 (0-0)	1.7 (0-3.96)	0 (0-0)	0 (0-0)	0 (0-0)	0.25 (0-0.75)	0 (0-0)	4.44 (0-11.18)

Table 10. Sandwich tern collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0	0	0	0.17	0	0	0	0	0	0	0	0.17
95% c.i.		0-0	0-0	0-0	0-0	0-0.51	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.51
Variables														
PCH (95% c.i.)		0-0	0-0	0-0	0-0	0.14-0.41	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.14-0.41

Table 11. Red-throated diver collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0	0.29	0	0	0	0	0	0	0	0	0	0	0.29
95% c.i.	0-0	0-0.88	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.88
Variables													
PCH (95% c.i.)	0-0	0.06-2.25	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.06-2.25

Table 12. Fulmar collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0	0.11	0.16	0.08	0	0.09	0.04	0.07	0	0.58	0.11	0.06	1.31
95% c.i.	0-0	0-0.27	0.02-0.34	0-0.23	0-0	0-0.22	0-0.12	0-0.18	0-0	0.37-0.81	0-0.27	0-0.19	0.4-2.64
Variables													
PCH (95% c.i.)	0-0	0-1.33	0-2.01	0-0.95	0-0	0-1.16	0-0.52	0-0.9	0-0	0-7.23	0-1.42	0-0.79	0-16.3

Table 13. Gannet collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0.78	2.11	3.86	0	1.2	3.07	2.48	0.61	2.78	8.97	0.38	26.25
95% c.i.		0-0	0-2.04	0.38-4.43	1.56-6.88	0-0	0-3.15	0.45-6.59	0.71-4.25	0-1.53	0.63-5.45	5.45-13	0-0.96	9.17-48.3
Variables														
Avoidance rate (95% c.i.)		0-0	0.64-0.92	1.73-2.49	3.16-4.56	0-0	0.98-1.41	2.51-3.63	2.03-2.93	0.5-0.72	2.28-3.29	7.34-10.61	0.31-0.45	21.48-31.03
PCH (95% c.i.)		0-0	0.34-1.36	0.92-3.68	1.69-6.73	0-0	0.52-2.08	1.35-5.36	1.09-4.33	0.27-1.07	1.22-4.86	3.93-15.65	0.17-0.67	11.5-45.79
NAF (Mean ± 95% c.i.)	Reduced (0%)	0 (0-0)	0.57 (0-1.51)	1.68 (0.3-3.53)	3.26 (1.32-5.82)	0 (0-0)	1.08 (0-2.84)	2.74 (0.4-5.88)	2.14 (0.61-3.67)	0.5 (0-1.25)	2.12 (0.48-4.16)	6.29 (3.82-9.11)	0.25 (0-0.63)	20.65 (6.93-38.4)
	Evidence based*	0 (0-0)	0.61 (0-1.59)	1.82 (0.33-3.82)	3.45 (1.4-6.16)	0 (0-0)	1.11 (0-2.94)	2.85 (0.41-6.11)	2.25 (0.64-3.86)	0.54 (0-1.34)	2.23 (0.5-4.37)	6.72 (4.08-9.73)	0.27 (0-0.69)	21.85 (7.36-40.6)

*Evidence based mean for gannet is based on 8% flying activity at night during the breeding season (March to September) and 4% flying activity at night during the nonbreeding season (October to February).

Table 14. Kittiwake collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0.61	3.18	7.32	16.12	12	4.84	1.75	2.33	0.39	0.68	4.24	4.38	57.82
95% c.i.		0-1.82	0.91- 6.01	3.57- 11.73	10.25- 23.16	7.87- 16.56	1.43- 9.02	0.44-3.5	0.37- 5.12	0-1.16	0-1.58	1.82- 7.26	2.07- 7.62	28.72- 94.54
Variables														
Avoidance rate (95% c.i.)		0.5-0.72	2.6-3.75	5.99- 8.65	13.19- 19.05	9.82- 14.19	3.96- 5.72	1.43- 2.07	1.9-2.75	0.32- 0.46	0.55-0.8	3.47- 5.01	3.59- 5.18	47.31- 68.34
PCH (95% c.i.)		0.45- 0.73	2.36- 3.83	5.43- 8.82	11.96- 19.41	8.91- 14.46	3.59- 5.83	1.3-2.11	1.73-2.8	0.29- 0.47	0.5-0.82	3.14-5.1	3.25- 5.28	42.91- 69.65
NAF (Mean ± 95% c.i.)	Reduced (25%)	0.46 (0- 1.38)	2.51 (0.72- 4.76)	6.08 (2.96- 9.74)	13.96 (8.88- 20.07)	10.74 (7.04- 14.82)	4.41 (1.3- 8.21)	1.58 (0.4- 3.16)	2.05 (0.33- 4.5)	0.33 (0- 0.98)	0.55 (0- 1.28)	3.26 (1.4- 5.58)	3.27 (1.55- 5.68)	49.19 (24.57- 80.16)

Table 15. Black-headed gull collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate and Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0	0	0	0	0	0	0	0	0	0	0.23	0	0.23
95% c.i.	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.69	0-0	0-0.69
Variables													
Avoidance rate (95% c.i.)	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.2-0.26	0-0	0.2-0.26
PCH (95% c.i.)	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.08-0.49	0-0	0.08-0.49

Table 16. Little gull collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate and Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0.11	0	0	0.95	0	0	0	0	0	0	0	0	1.07
95% c.i.	0-0.34	0-0	0-0	0.24-1.91	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.24-2.25
Variables													
Avoidance rate (95% c.i.)	0.1-0.13	0-0	0-0	0.84-1.07	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.93-1.2
PCH (95% c.i.)	0.03-0.23	0-0	0-0	0.29-1.97	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.33-2.2

Table 17. Common gull collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate and Potential Collision Height (PCH) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0.53	1.35	0.28	0	0	0	0	0	0	0	0.28	0	2.44
95% c.i.	0-1.33	0.27-2.7	0-0.83	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.84	0-0	0.27-5.7
Variables													
Avoidance rate (95% c.i.)	0.47-0.6	1.18-1.52	0.24-0.31	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.24-0.31	0-0	2.13-2.74
PCH (95% c.i.)	0.45-0.8	1.13-2.03	0.23-0.42	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.23-0.42	0-0	2.04-3.67

Table 18. Lesser black-backed gull collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean	0	0.35	0.24	0	0	0	0.93	0	0	0	0	0	1.53
95% c.i.	0-0	0-1.06	0-0.73	0-0	0-0	0-0	0-2.79	0-0	0-0	0-0	0-0	0-0	0-4.59
Variables													
Avoidance rate (95% c.i.)	0-0	0.24-0.6	0.16-0.42	0-0	0-0	0-0	0.63-1.58	0-0	0-0	0-0	0-0	0-0	1.03-2.6
PCH (95% c.i.)	0-0	0.24-0.6	0.16-0.42	0-0	0-0	0-0	0.63-1.58	0-0	0-0	0-0	0-0	0-0	1.03-2.6
NAF (Mean ± 95% c.i.)	Reduced (25%) 0 (0-0)	0.28 (0-0.84)	0.2 (0-0.61)	0 (0-0)	0 (0-0)	0 (0-0)	0.84 (0-2.52)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	1.32 (0-3.97)

Table 19. Great black-backed gull collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0.92	0.87	1.11	0	0	1.82	0	0	0	0.32	0	5.03
95% c.i.		0-0	0-2.14	0-2.62	0-2.77	0-0	0-0	0-4.25	0-0	0-0	0-0	0-0.95	0-0	0-12.73
Variables														
Avoidance rate (95% c.i.)		0-0	0.73-1.1	0.7-1.05	0.89-1.33	0-0	0-0	1.46-2.18	0-0	0-0	0-0	0.25-0.38	0-0	4.03-6.04
PCH (95% c.i.)		0-0	0.77-1.35	0.73-1.29	0.93-1.64	0-0	0-0	1.53-2.69	0-0	0-0	0-0	0.26-0.47	0-0	4.22-7.44
NAF (Mean ± 95% c.i.)	Reduced (25%)	0 (0-0)	0.73 (0-1.69)	0.73 (0-2.18)	0.96 (0-2.4)	0 (0-0)	0 (0-0)	1.64 (0-3.84)	0 (0-0)	0 (0-0)	0 (0-0)	0.24 (0-0.73)	0 (0-0)	4.3 (0-10.84)

Table 20. Sandwich tern collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 2. Monthly values are the mean and 95% confidence intervals. The range of values for avoidance rate, Potential Collision Height (PCH) and Nocturnal Activity Factor (NAF) variables are presented. Annual totals are calculated as the summed totals of the monthly means.

Deterministic CRM		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Mean		0	0	0	0	0.17	0	0	0	0	0	0	0	0.17
95% c.i.		0-0	0-0	0-0	0-0	0-0.51	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0.51
Variables														
PCH (95% c.i.)		0-0	0-0	0-0	0-0	0.15-0.42	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.15-0.42

Table 21. All species collision mortality for the 250m wind turbine calculated using deterministic CRM with Band Option 1. Monthly values are the mean and 95% confidence intervals. Annual totals are calculated as the summed totals of the monthly means.

Species	Deterministic CRM (Mean ± 95% c.i.)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual: mean (95% c.i.)
Red-throated diver	0 (0-0)	0.01 (0-0.02)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.01 (0-0.02)
Fulmar	0 (0-0)	4.63 (0-11.81)	6.97 (1.03-14.75)	3.29 (0-9.86)	0 (0-0)	4.02 (0-9.39)	1.79 (0-5.37)	3.11 (0-7.76)	0 (0-0)	25.07 (16.05-35.1)	4.93 (0-11.56)	2.73 (0-8.18)	56.53 (17.07-113.78)
Gannet	0 (0-0)	2.52 (0-6.63)	6.85 (1.23-14.38)	12.52 (5.08-22.33)	0 (0-0)	3.88 (0-10.22)	9.97 (1.45-21.36)	8.05 (2.3-13.8)	1.99 (0-4.97)	9.03 (2.03-17.69)	29.11 (17.66-42.17)	1.25 (0-3.11)	85.15 (29.75-156.65)
Kittiwake	2.74 (0-8.23)	14.38 (4.1-27.23)	33.14 (16.15-53.1)	72.97 (46.43-104.87)	54.35 (35.61-74.96)	21.92 (6.48-40.86)	7.92 (1.98-15.84)	10.53 (1.68-23.18)	1.75 (0-5.25)	3.06 (0-7.15)	19.18 (8.23-32.85)	19.84 (9.38-34.5)	261.79 (130.03-428.03)
Black-headed gull	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.3 (0-0.91)	0 (0-0)	0.3 (0-0.91)
Little gull	0.47 (0-1.42)	0 (0-0)	0 (0-0)	3.98 (0.99-7.95)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	4.45 (0.99-9.37)
Common gull	2.15 (0-5.37)	5.43 (1.09-10.87)	1.11 (0-3.34)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	1.12 (0-3.37)	0 (0-0)	9.82 (1.09-22.94)
Lesser black-backed gull	0 (0-0)	0.78 (0-2.33)	0.54 (0-1.62)	0 (0-0)	0 (0-0)	0 (0-0)	2.05 (0-6.14)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	3.36 (0-10.08)
Great black-backed gull	0 (0-0)	1.38 (0-3.21)	1.31 (0-3.94)	1.67 (0-4.17)	0 (0-0)	0 (0-0)	2.74 (0-6.39)	0 (0-0)	0 (0-0)	0 (0-0)	0.47 (0-1.42)	0 (0-0)	7.57 (0-19.14)
Sandwich tern	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	3.5 (0-10.49)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	3.5 (0-10.49)

Table 22. All species collision mortality for the 300m wind turbine calculated using deterministic CRM with Band Option 1. Monthly values are the mean and 95% confidence intervals. Annual totals are calculated as the summed totals of the monthly means.

Species	Deterministic CRM (Mean ± 95% c.i.)												Annual: mean (95% c.i.)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Red-throated diver	0 (0-0)	0.01 (0-0.02)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.01 (0-0.02)
Fulmar	0 (0-0)	4.03 (0-10.3)	6.07 (0.89-12.85)	2.86 (0-8.59)	0 (0-0)	3.51 (0-8.19)	1.56 (0-4.68)	2.71 (0-6.77)	0 (0-0)	21.85 (13.99-30.6)	4.3 (0-10.08)	2.38 (0-7.13)	49.27 (14.88-99.17)
Gannet	0 (0-0)	2.13 (0-5.6)	5.79 (1.04-12.15)	10.58 (4.29-18.87)	0 (0-0)	3.28 (0-8.64)	8.42 (1.22-18.06)	6.8 (1.94-11.66)	1.68 (0-4.2)	7.64 (1.72-14.95)	24.61 (14.93-35.64)	1.05 (0-2.63)	71.98 (25.15-132.41)
Kittiwake	2.41 (0-7.22)	12.6 (3.59-23.87)	29.05 (14.15-46.55)	63.96 (40.69-91.93)	47.64 (31.21-65.71)	19.21 (5.68-35.81)	6.94 (1.74-13.88)	9.23 (1.47-20.32)	1.54 (0-4.61)	2.69 (0-6.27)	16.81 (7.21-28.79)	17.39 (8.22-30.24)	229.47 (113.98-375.18)
Black-headed gull	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.27 (0-0.8)	0 (0-0)	0.27 (0-0.8)
Little gull	0.42 (0-1.26)	0 (0-0)	0 (0-0)	3.54 (0.89-7.08)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	3.96 (0.89-8.34)
Common gull	1.87 (0-4.68)	4.74 (0.95-9.47)	0.97 (0-2.91)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0.98 (0-2.94)	0 (0-0)	8.56 (0.95-19.99)
Lesser black-backed gull	0 (0-0)	0.67 (0-2.01)	0.46 (0-1.39)	0 (0-0)	0 (0-0)	0 (0-0)	1.77 (0-5.3)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	2.9 (0-8.7)
Great black-backed gull	0 (0-0)	1.18 (0-2.75)	1.12 (0-3.37)	1.43 (0-3.56)	0 (0-0)	0 (0-0)	2.34 (0-5.46)	0 (0-0)	0 (0-0)	0 (0-0)	0.41 (0-1.22)	0 (0-0)	6.48 (0-16.37)
Sandwich tern	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	3.09 (0-9.26)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	0 (0-0)	3.09 (0-9.26)



MacArthur Green

East Anglia ONE North Offshore Wind Farm

Appendix 12.2

Offshore Ornithology

Annex 5

Species abundance plots

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4	Final	Mark Trinder	25/06/2019

1 INTRODUCTION

1. This appendix provides plots of species abundance in each month for the East Anglia ONE North wind farm site alone and with the inclusion of the 4km buffer. Where appropriate the abundance estimates include unidentified birds (e.g. large gulls, small gulls, auks), added to the positively identified species totals using species and survey specific proportions. Razorbill and guillemot totals have also been adjusted to account for availability bias.
2. Table A5 provides a key to figure numbering.

Table A5. Key to figure numbering.

Species	Figure number
Red-throated diver	1
Fulmar	2
Gannet	3
Great skua	4
Razorbill	5
Guillemot	6
Sandwich tern	7
Commic tern	8
Kittiwake	9
Black-headed gull	10
Little gull	11
Mediterranean gull	12
Common gull	13
Lesser black-backed gull	14
Herring gull	15
Great black-backed gull	16

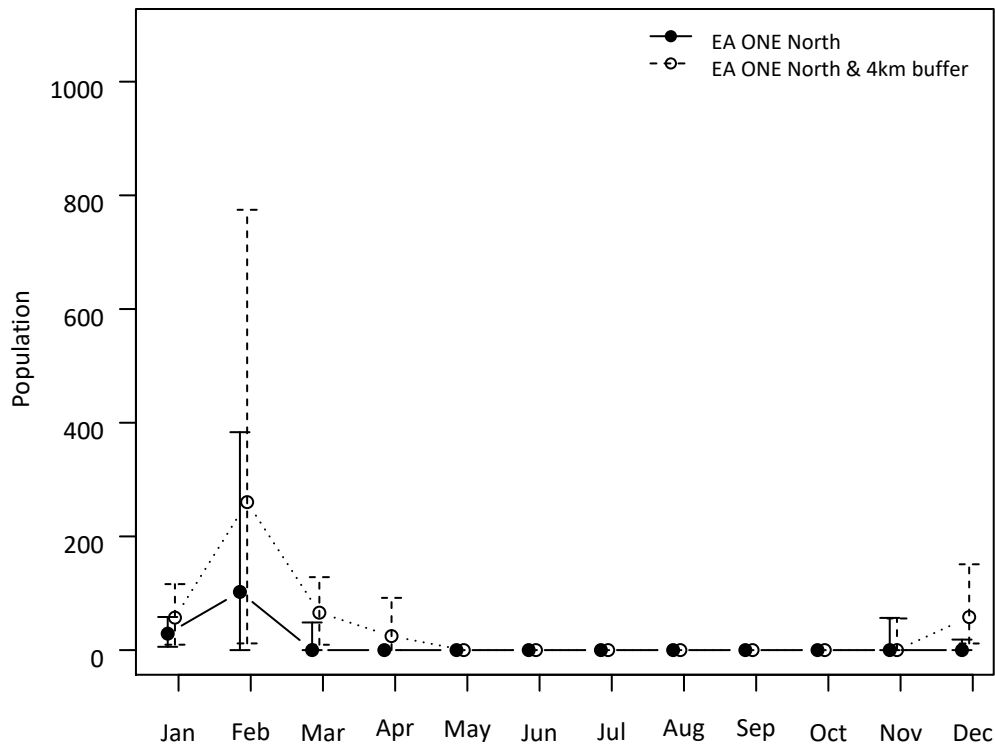


Figure 1. Red-throated Diver. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

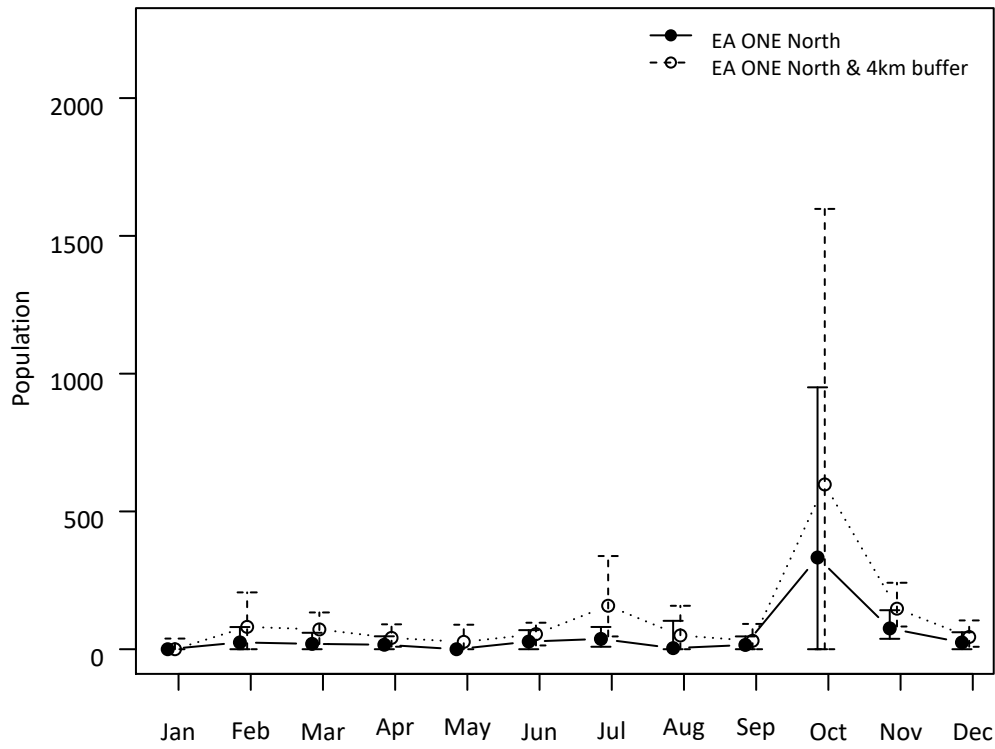


Figure 2. Fulmar. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

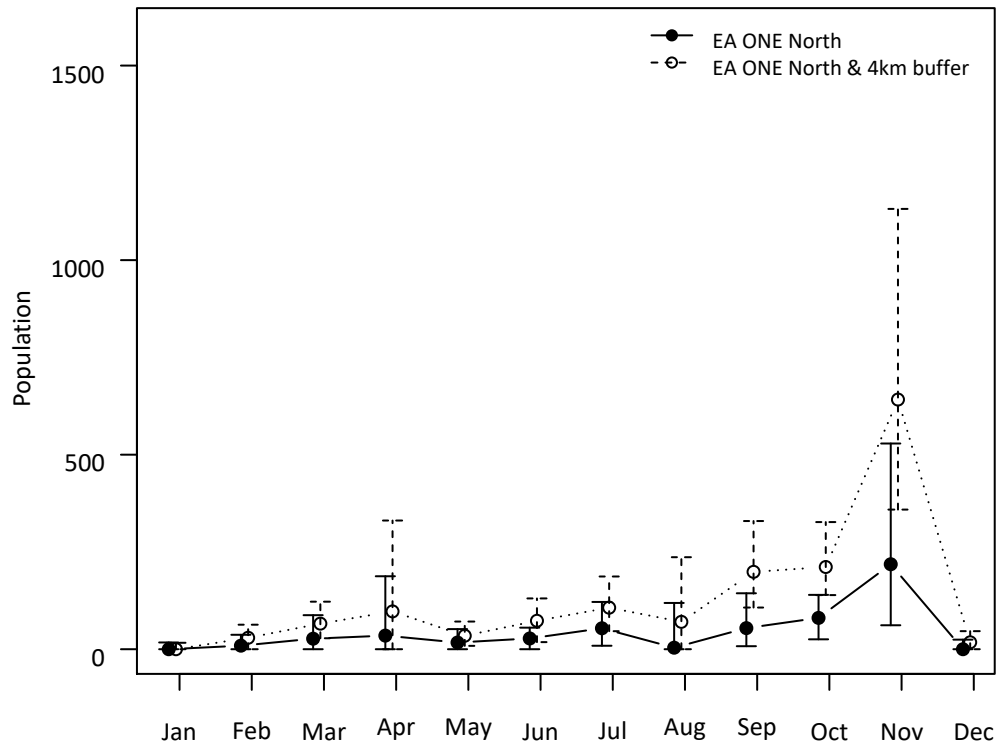


Figure 3. Gannet. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

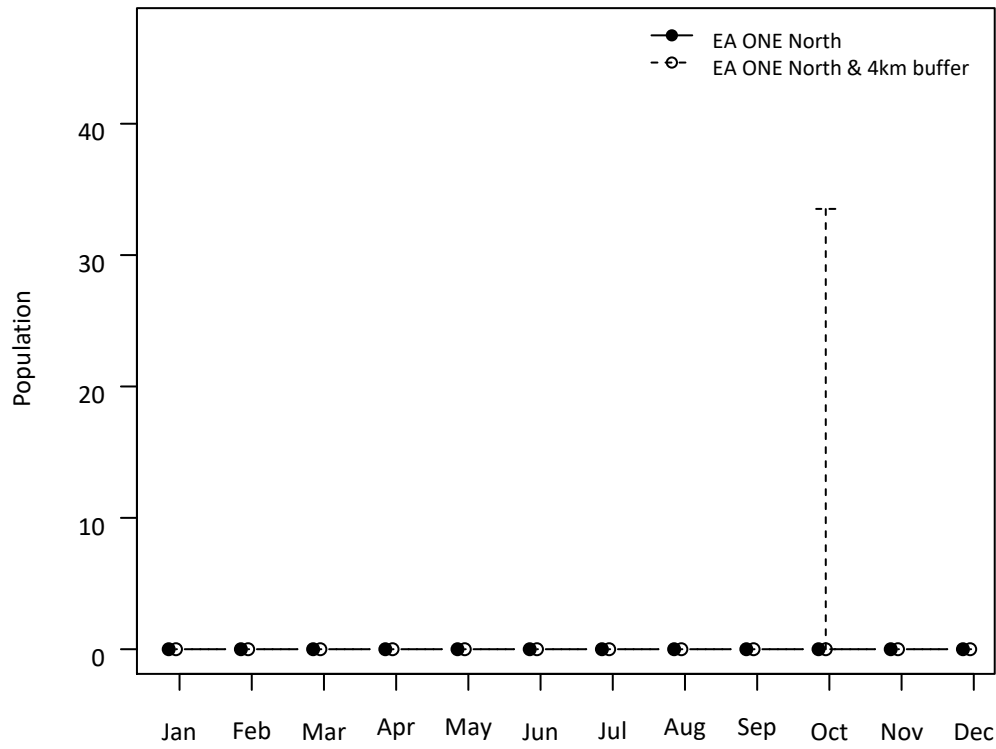


Figure 4. Great Skua. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

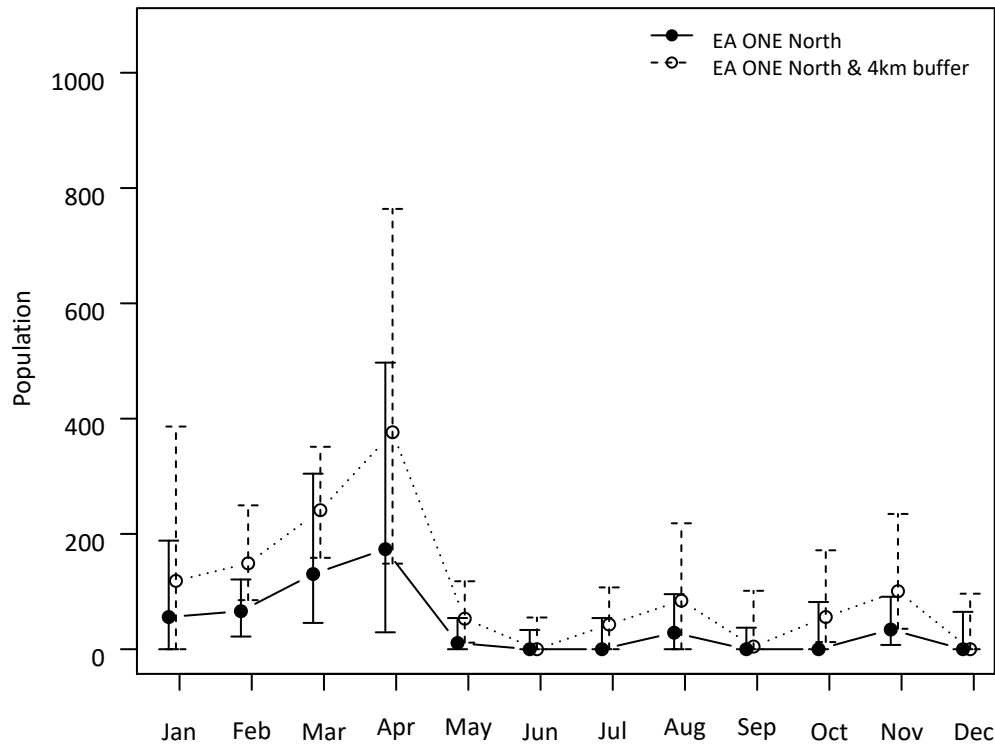


Figure 5. Razorbill. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

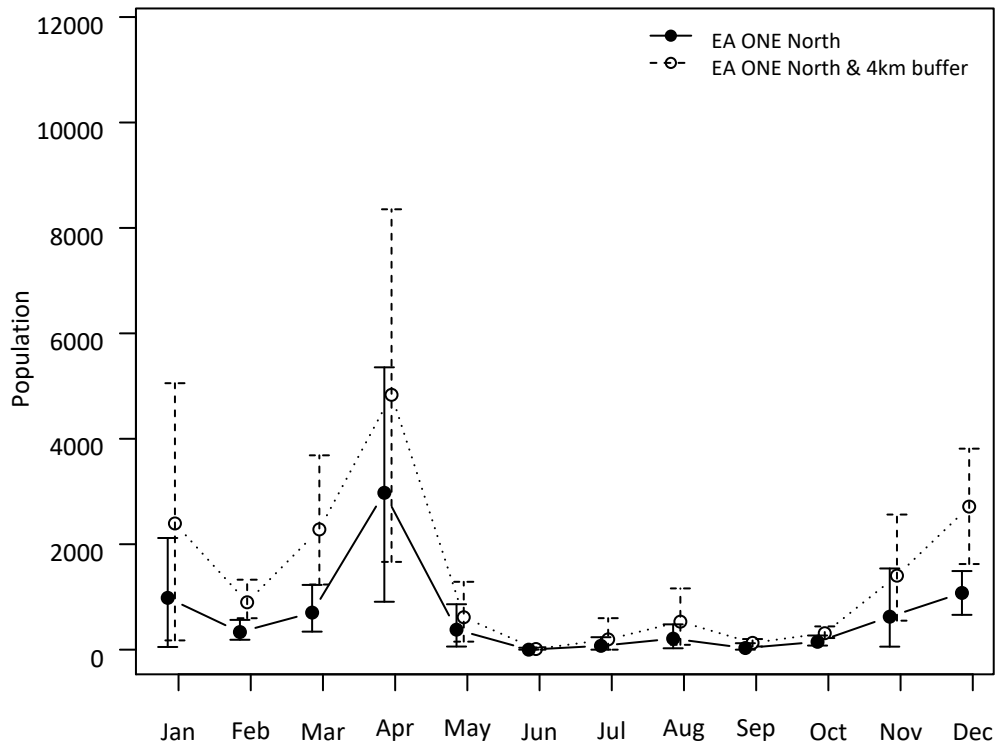


Figure 6. Guillemot. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

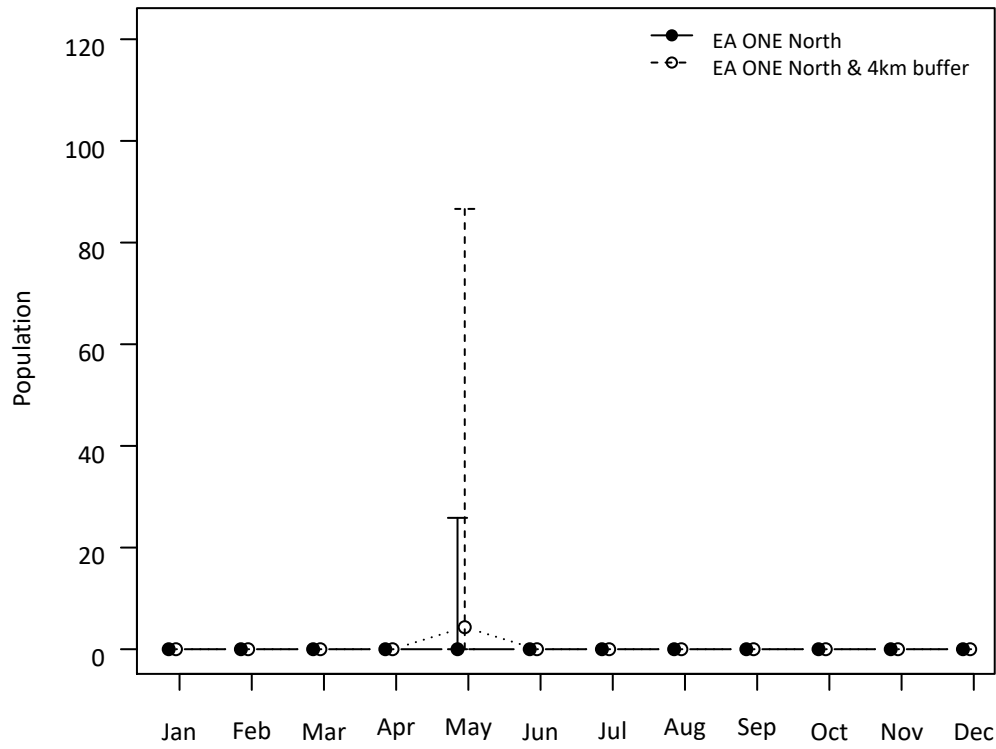


Figure 7. Sandwich Tern. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

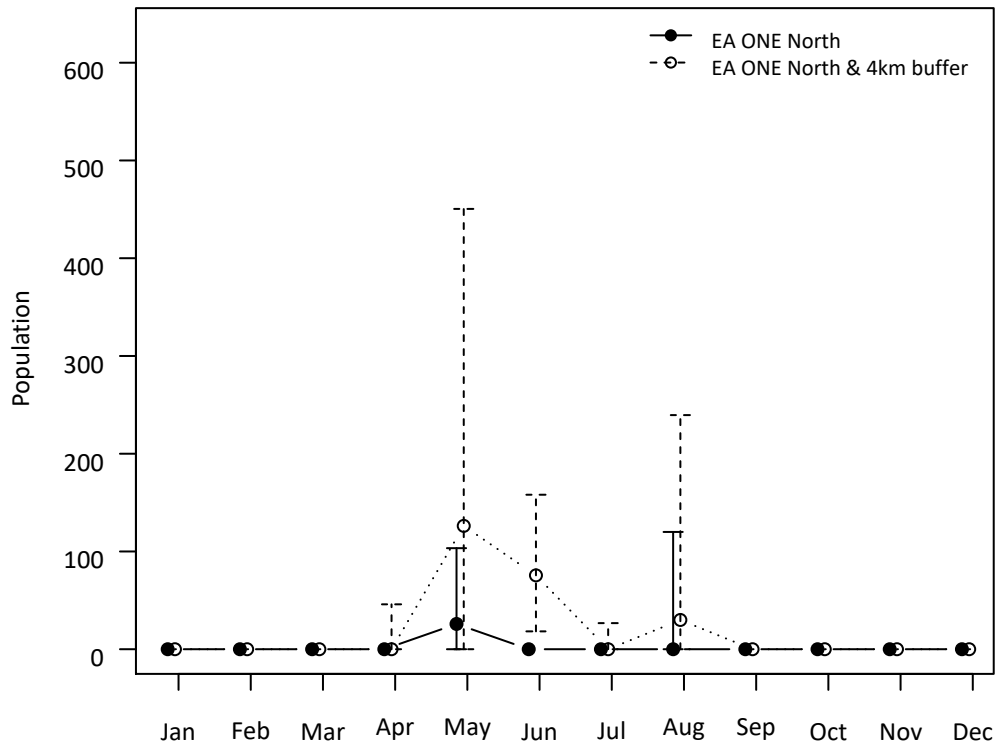


Figure 8. Common Tern. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

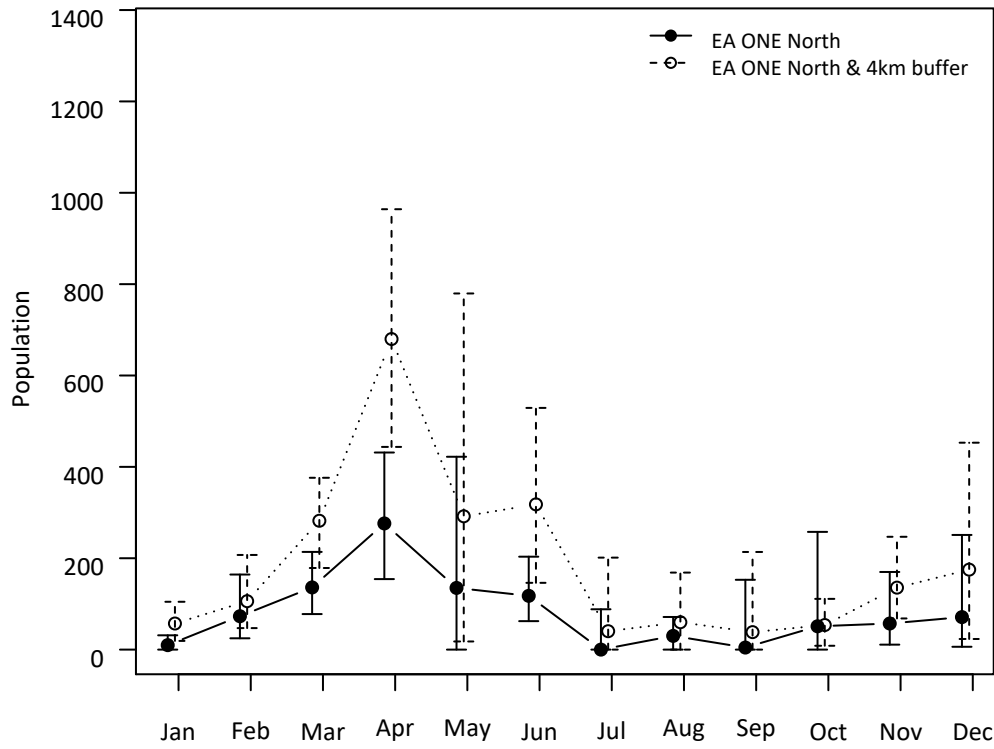


Figure 9. Kittiwake. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

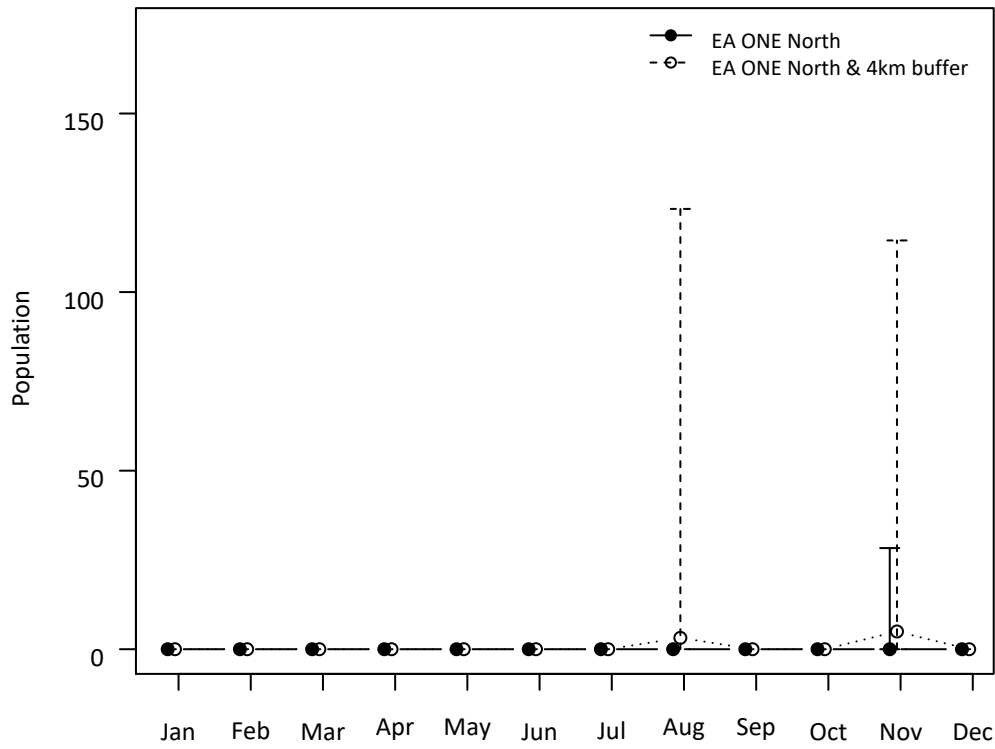


Figure 10. Black-headed Gull. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

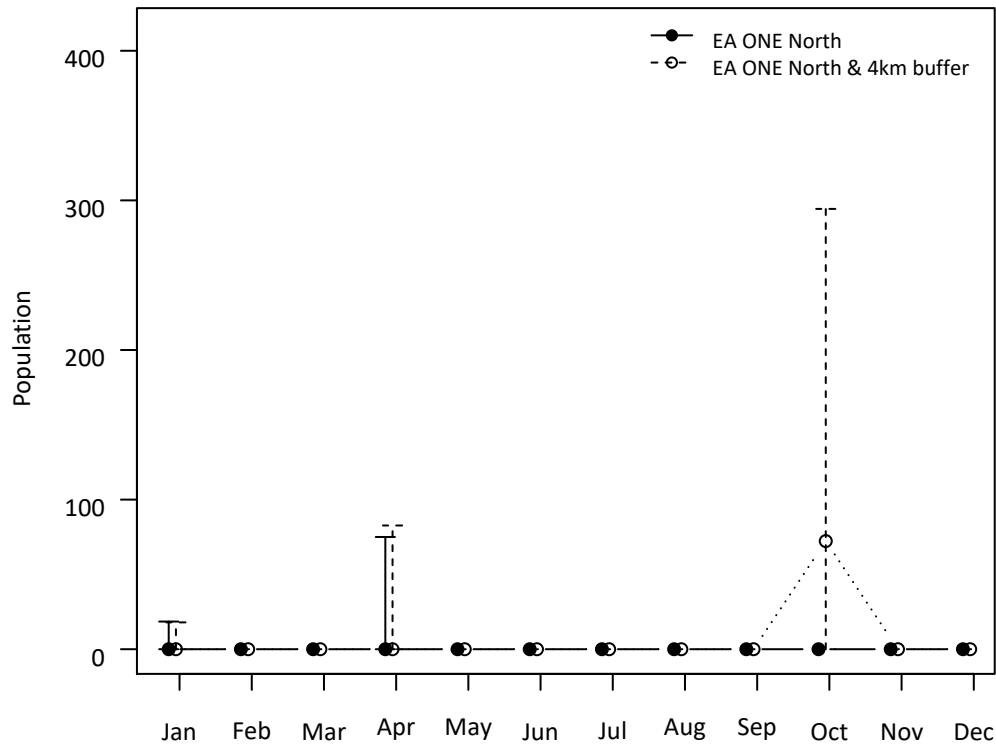


Figure 11. Little Gull. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

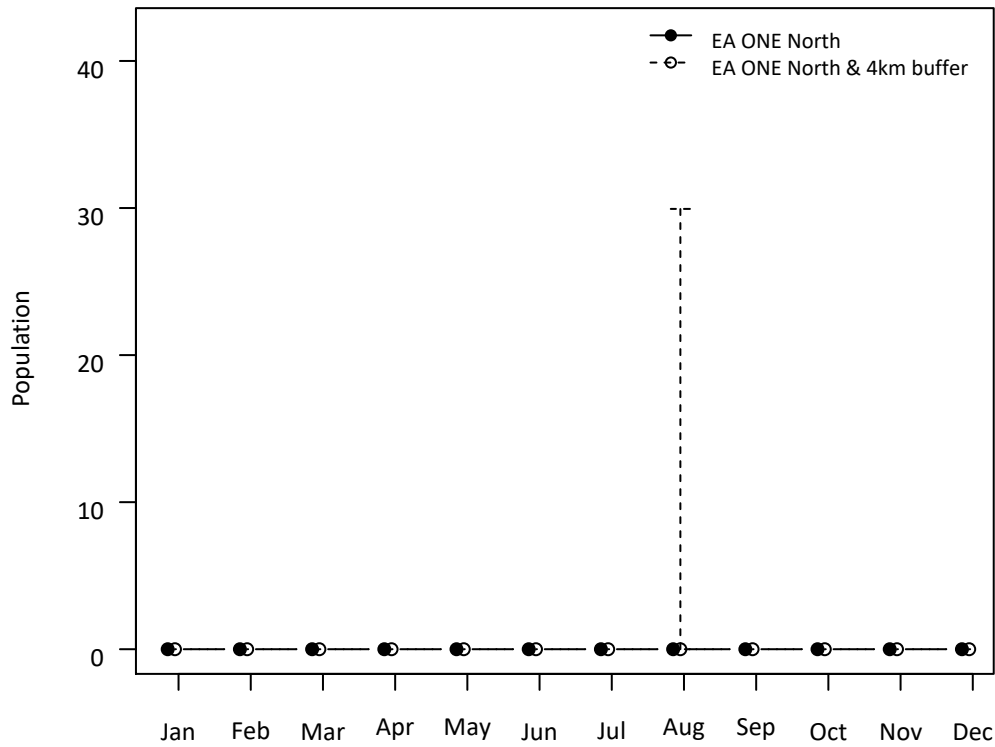


Figure 12. Mediterranean Gull. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

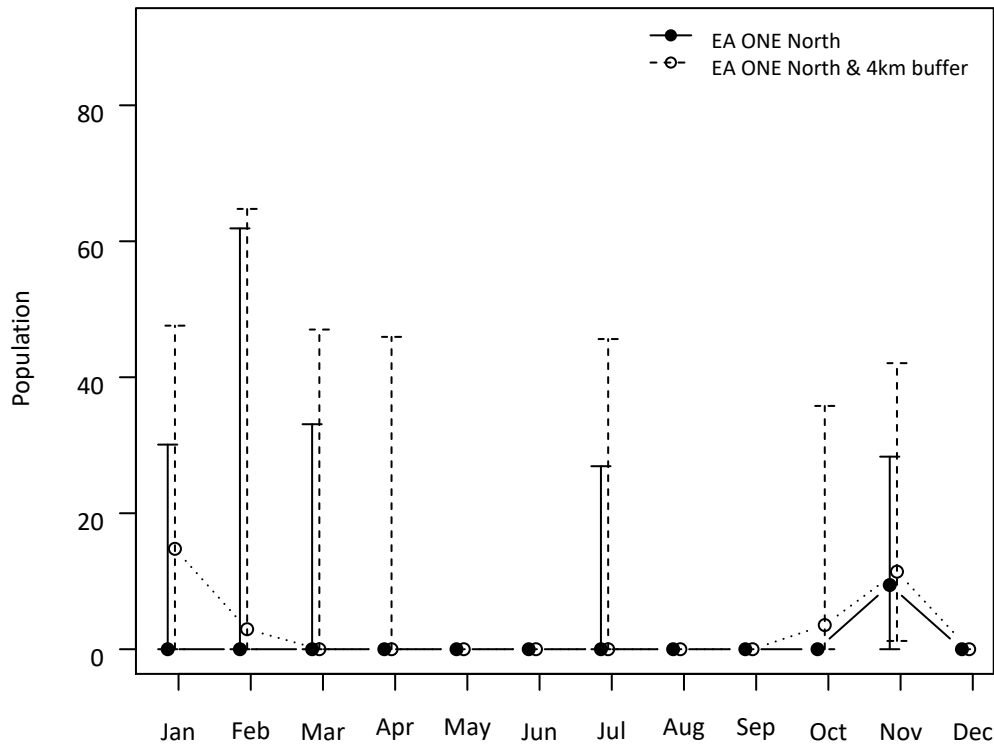


Figure 13. Common Gull. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

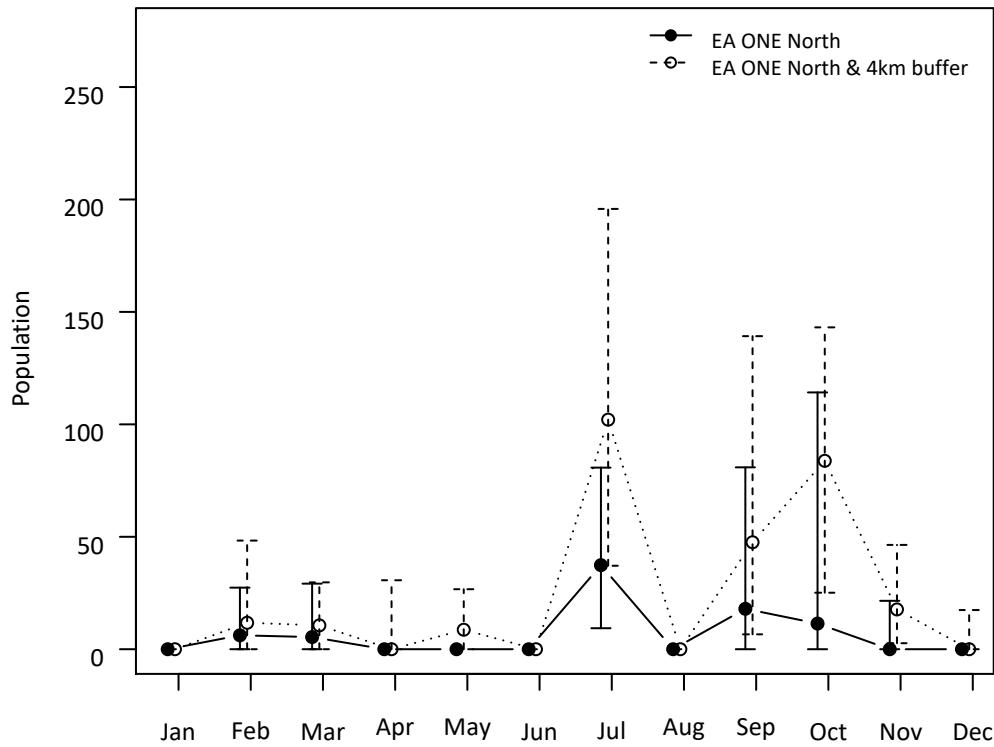


Figure 14. Lesser Black-backed Gull. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

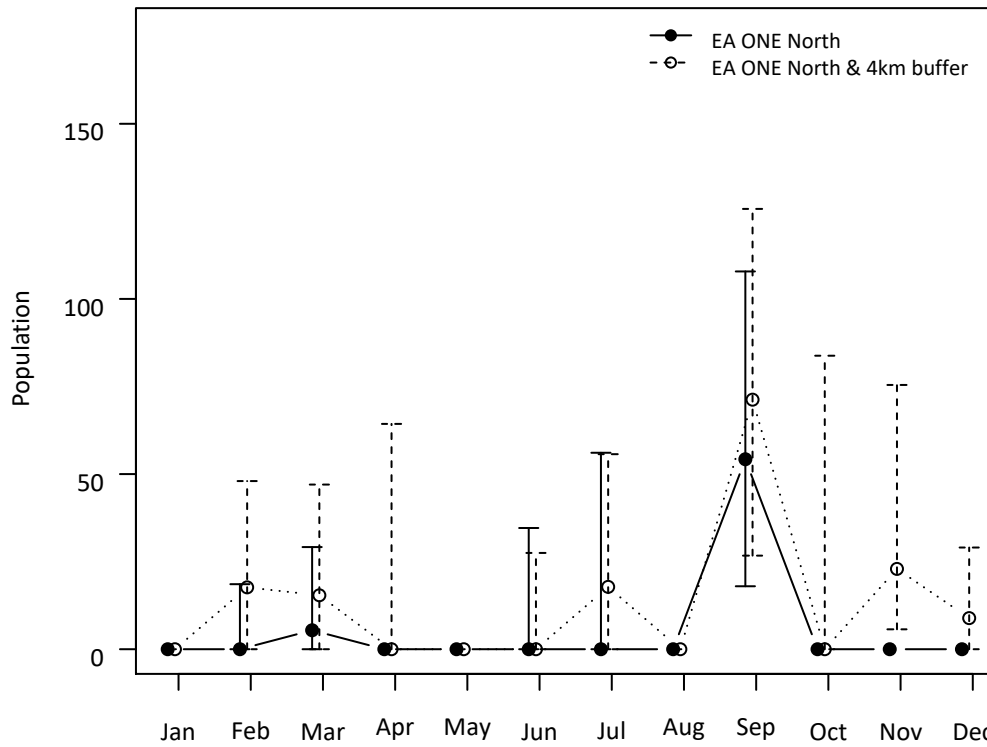


Figure 15. Herring Gull. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).

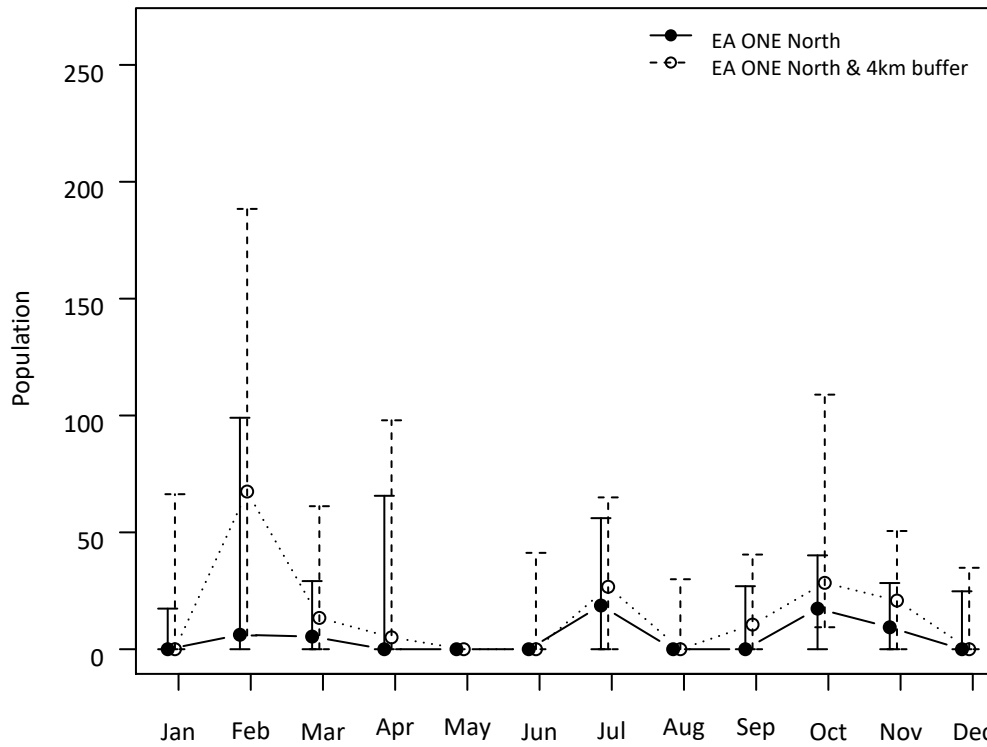


Figure 16. Great Black-backed Gull. Median design based abundance estimates (plus 95% confidence intervals) of birds in flight and on the sea in East Anglia ONE North (filled circles, solid lines) and East Anglia ONE North plus 4km buffer (open circles, dashed lines).



MacArthur Green

**East Anglia ONE North Offshore Wind
Farm Appendix 12.2
Offshore Ornithology**

**Annex 6
Species Distribution Figures**

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4	Final	Mark Trinder	25/06/2019

1 INTRODUCTION

1. This appendix provides plots of species distributions recorded across the East Anglia ONE North wind farm site for the complete period of surveys (24 months in total). For species recorded in low numbers these figures plot all the observations recorded for the family group onto one figure, while more commonly recorded species are plotted one species per map. In addition, for species recorded in low numbers, all observations are plotted while species with higher recorded numbers are combined by season (using definitions in Furness, 2015)¹.
2. Table A6 provides a key to figure numbering.

Table A6. Key to figure numbering.

Species	Figure number
Red throated diver	12.6.1
Fulmar	12.6.2
Gannet	12.6.3
Great skua	12.6.4
Razorbill	12.6.5
Guillemot	12.6.6
Guillemot/Razorbill species	12.6.7
Tern species	12.6.8
Kittiwake	12.6.9
Small gull species	12.6.10
Lesser black-backed gull	12.6.11
Herring gull	12.6.12
Great black-backed gull	12.6.13
Gull unidentified species	12.6.14

¹ Furness, R.W. (2015). Non-breeding season populations of seabirds in UK waters: Population sizes for Biologically Defined Minimum Population Scales (BDMPS). Natural England Commissioned Report Number 164. 389pp.

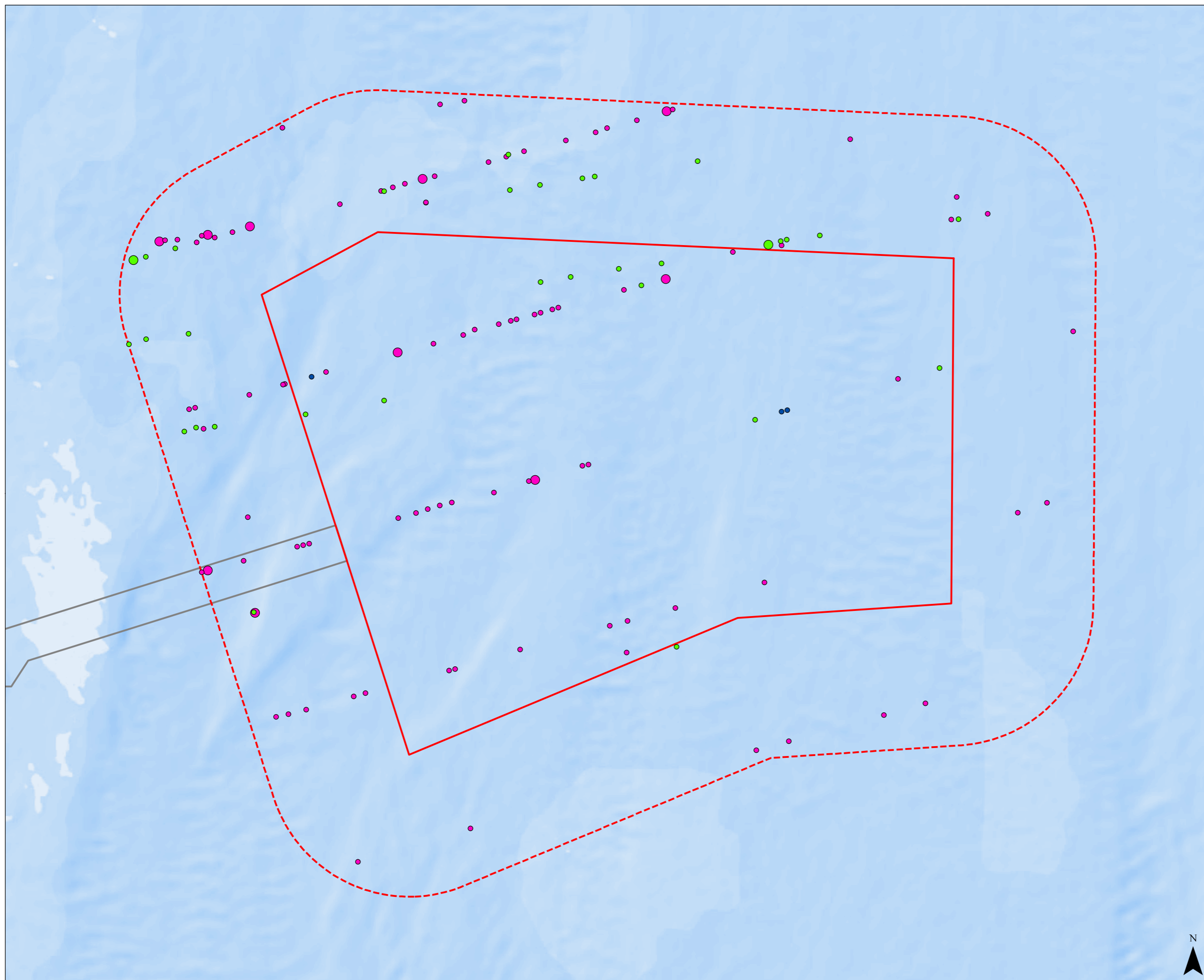
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- East Anglia ONE North Windfarm Site
 - 4km Buffer
 - Export Cable Corridor

Count

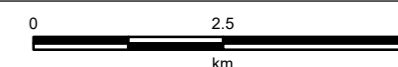
- 1
- 2 - 5

Season

- Autumn Migration
- Winter
- Spring Migration



Survey Data: APEM



Legend:

- East Anglia ONE North Windfarm Site
- 4km Buffer
- Export Cable Corridor

Count

- 1
- 2 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 45

Season

- Autumn Migration
- Winter
- Spring Migration
- Breeding

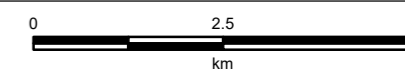
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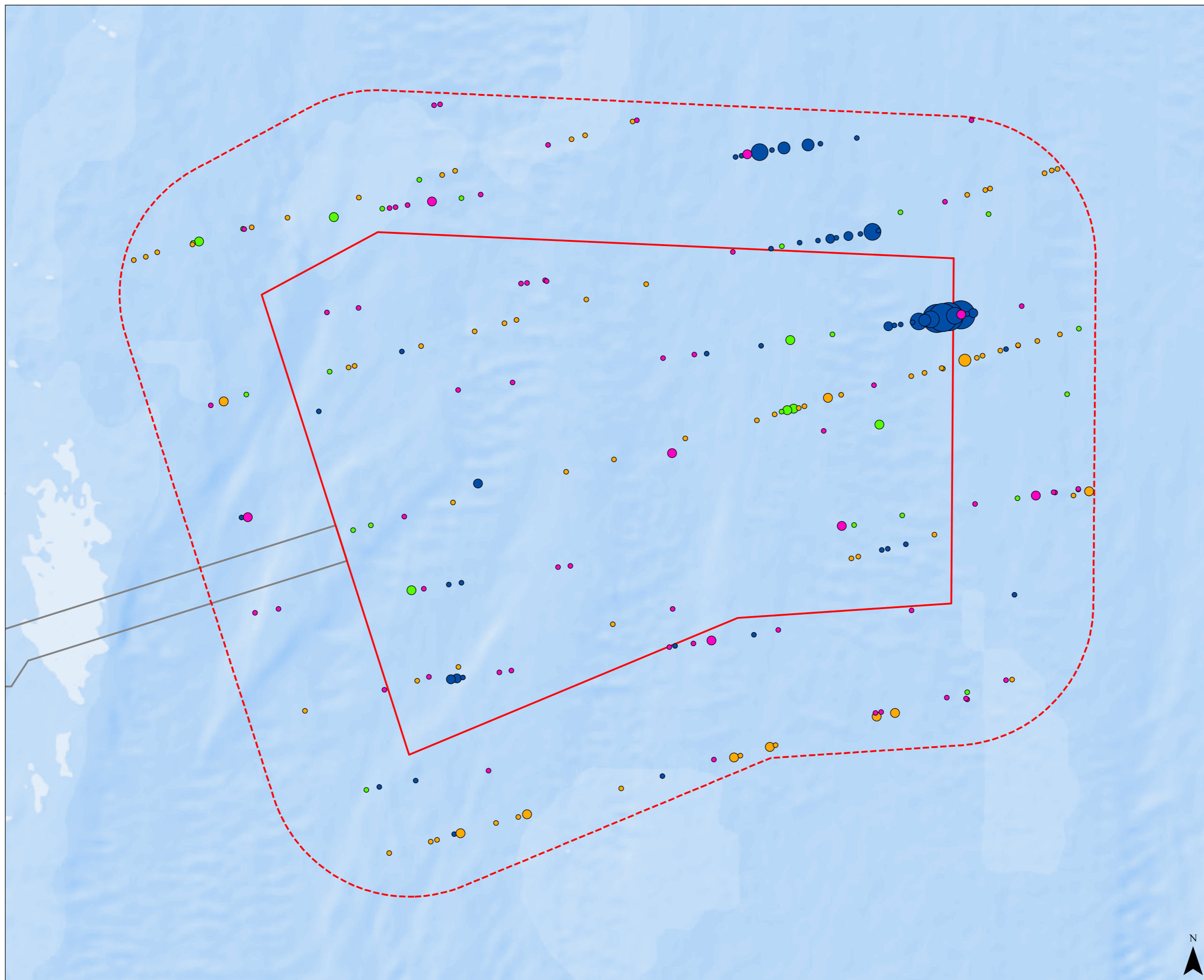
East Anglia ONE North

Figure 12.6.2

**Fulmar
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



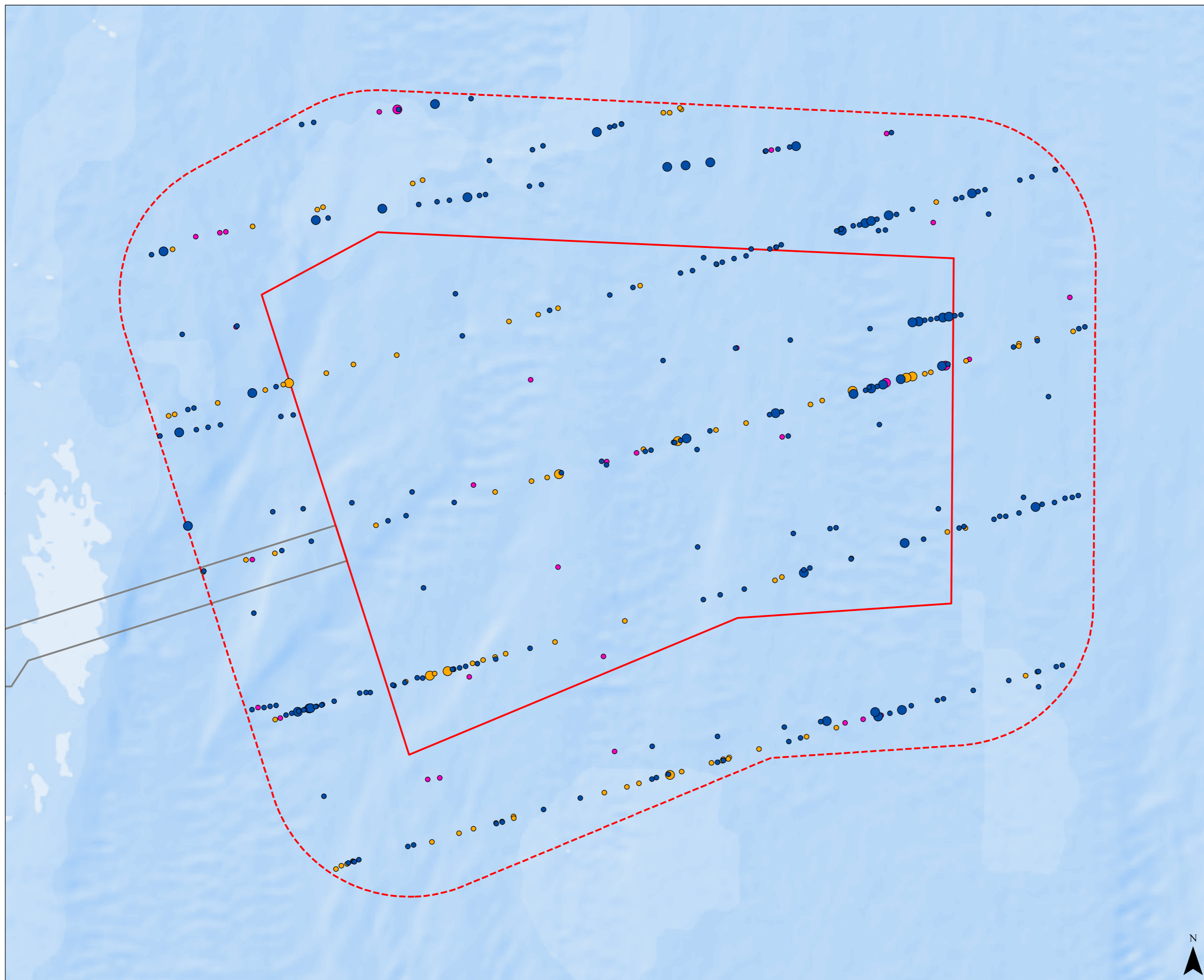
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- East Anglia ONE North Windfarm Site
 - 4km Buffer
 - Export Cable Corridor

Count

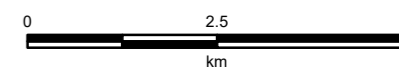
- 1
- 2 - 5

Season

- Autumn Migration
- Spring Migration
- Breeding



Survey Data: APEM



- Legend:
- East Anglia ONE North Windfarm Site
 - 4km Buffer
 - Export Cable Corridor
- Count**
- 1
- Season**
- Autumn Migration

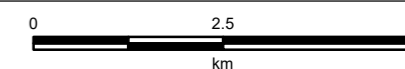
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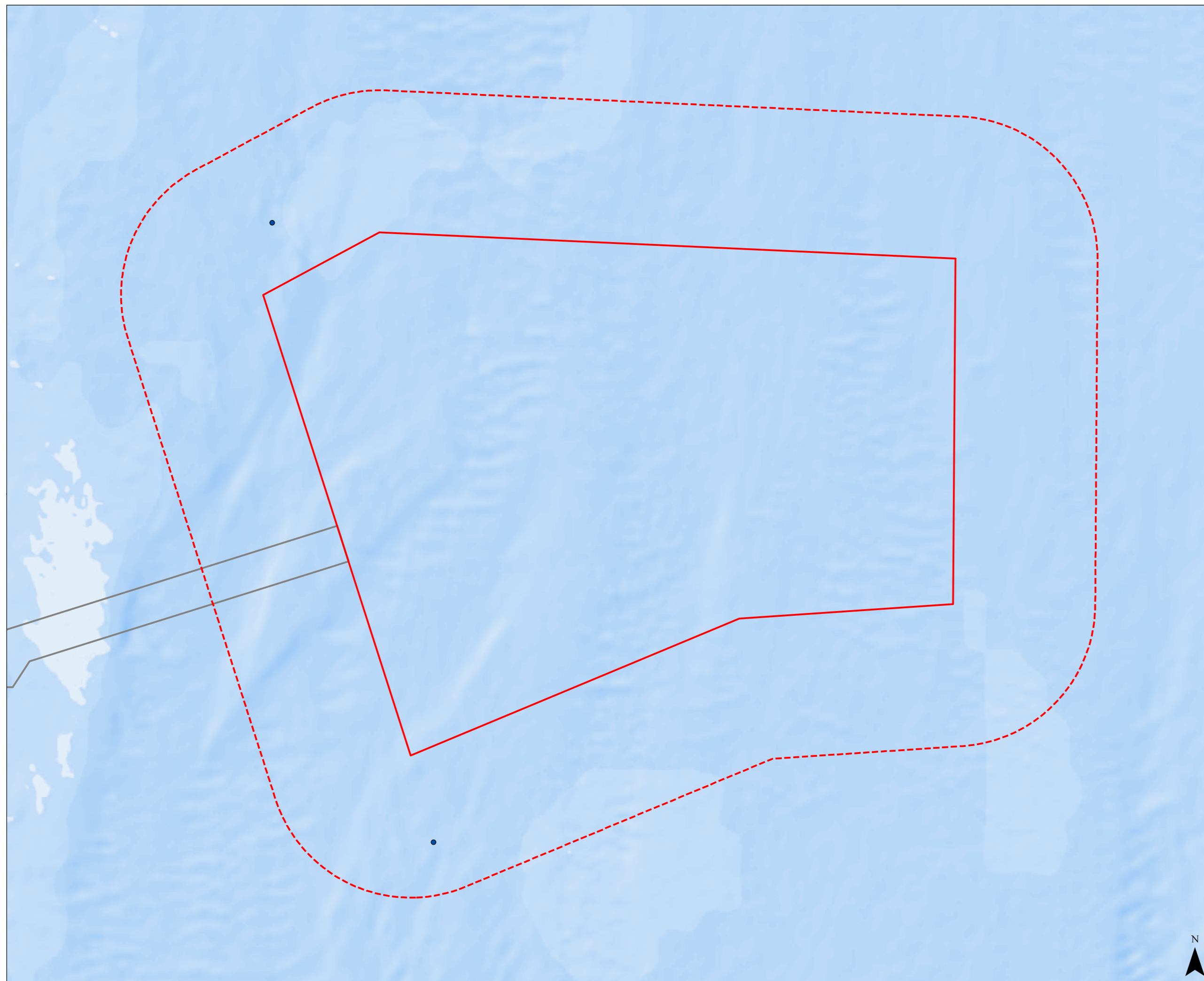
East Anglia ONE North

Figure 12.6.4

**Great Skua
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



Legend:

- East Anglia ONE North Windfarm Site
- 4km Buffer
- Export Cable Corridor

Count

- 1
- 2 - 5
- 6 - 10

Season

- Autumn Migration
- Winter
- Spring Migration
- Breeding

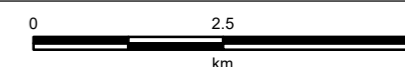
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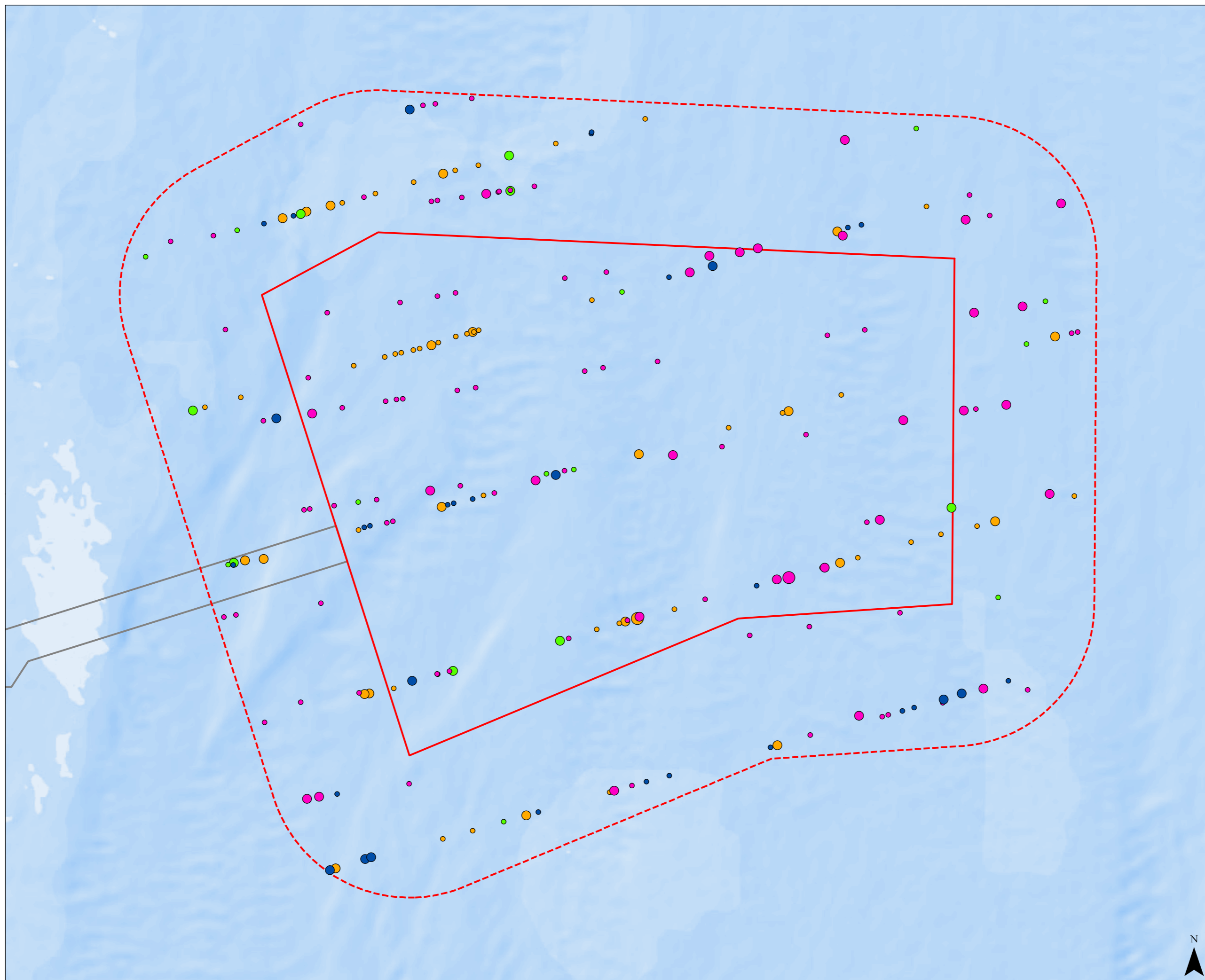
East Anglia ONE North

Figure 12.6.5

**Razorbill
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



- Legend:
- East Anglia ONE North Windfarm Site
 - 4km Buffer
 - Export Cable Corridor

Count

- 1
- 2 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 45

Season

- Breeding
- Non-breeding

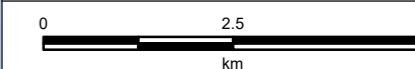
Survey Data: APEM



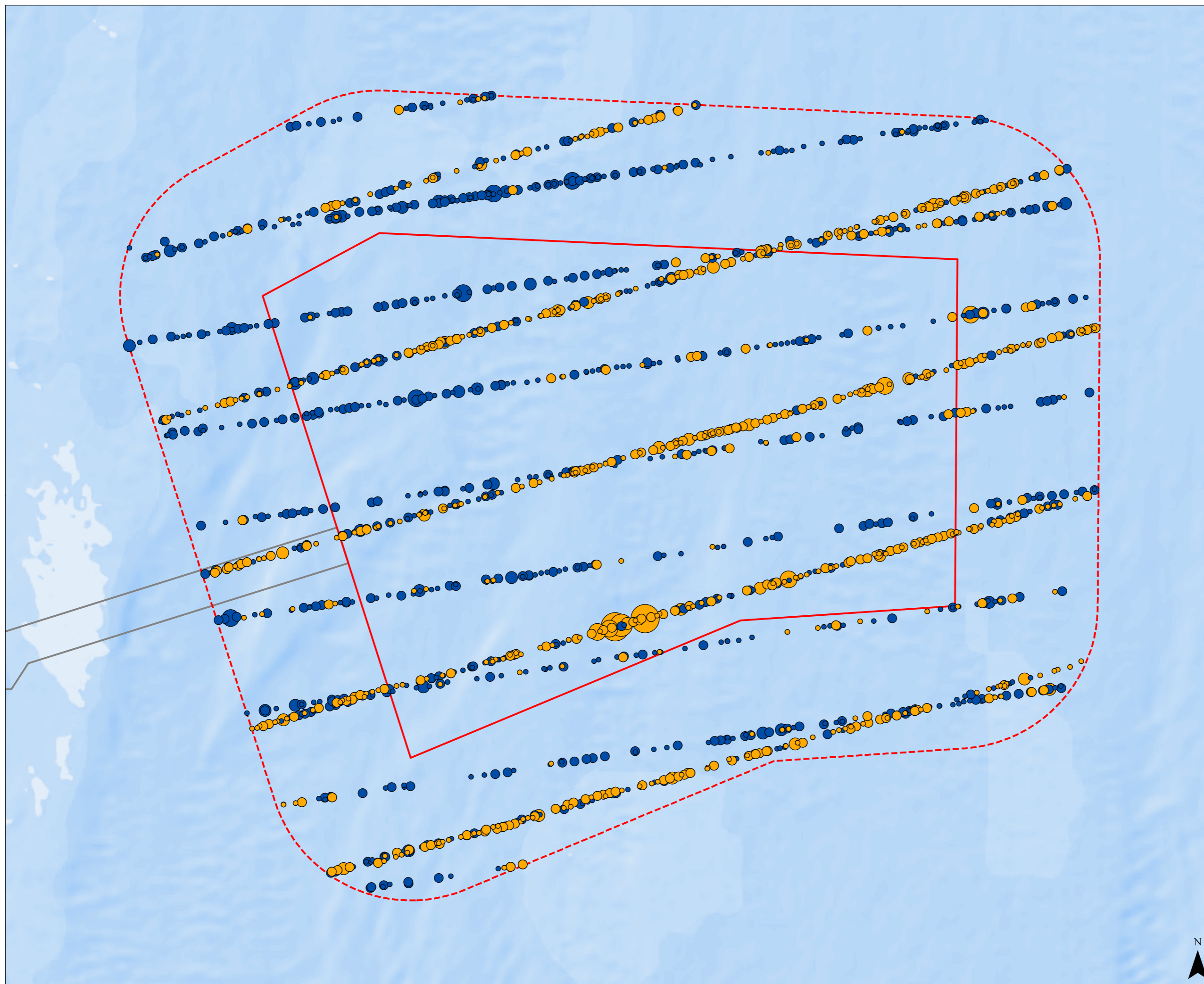
East Anglia ONE North

Figure 12.6.6

**Guillemot
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



Legend:

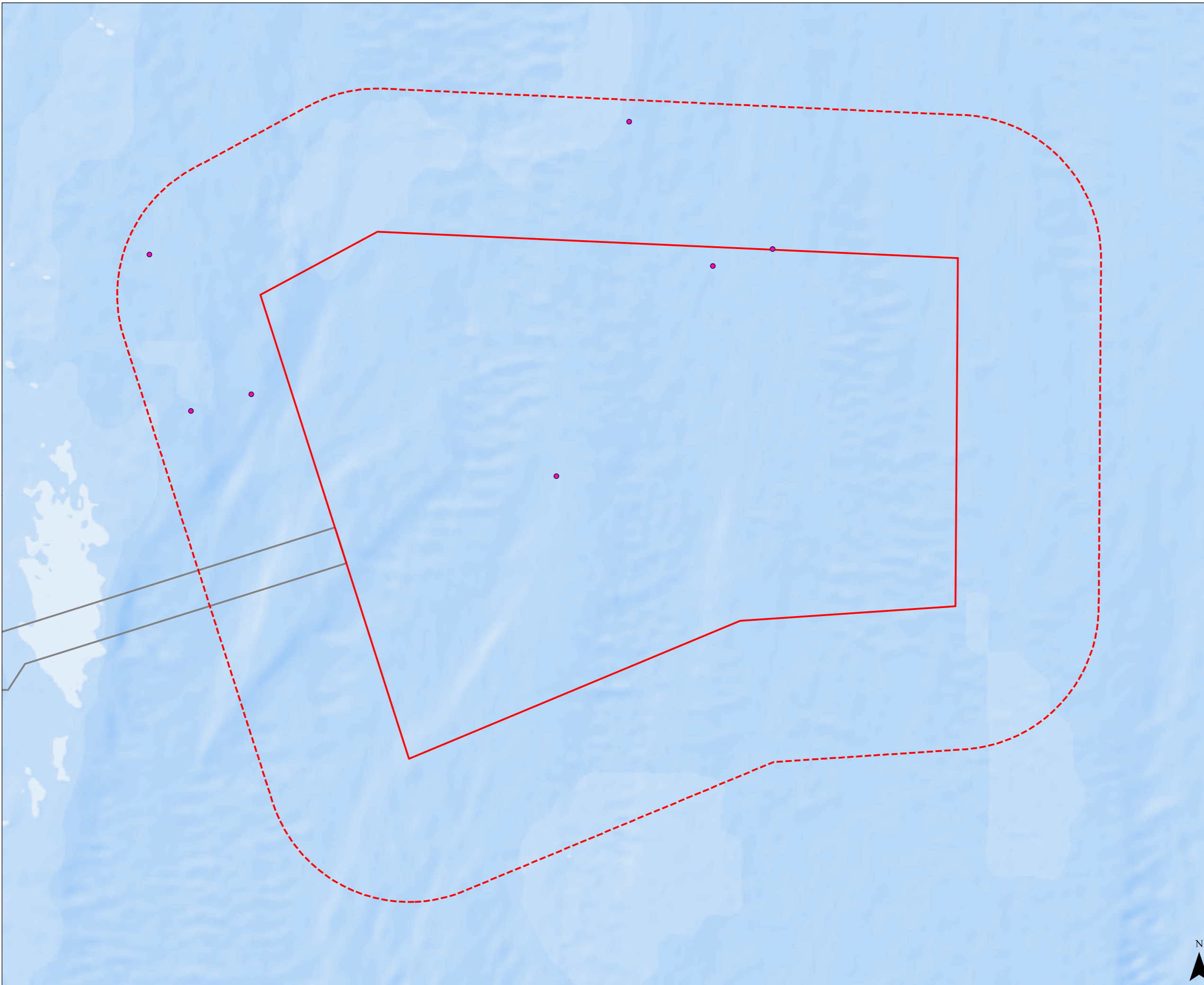
- East Anglia ONE North Windfarm Site
- 4km Buffer
- Export Cable Corridor

Count

- 1

Species

- Guillemot/Razorbill



Survey Data: APEM

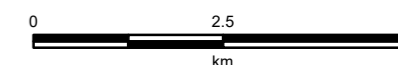


MacArthur Green

East Anglia ONE North

Figure 12.6.7

Guillemot/Razorbill
2016 - 2018



MAP SCALE: 1:100,000 @ A3

Legend:

- East Anglia ONE North Windfarm Site
- 4km Buffer
- Export Cable Corridor

Count

- 1
- 2 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 45

Species

- Commic Tern
- Sandwich Tern
- Tern Species

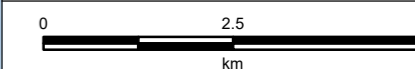
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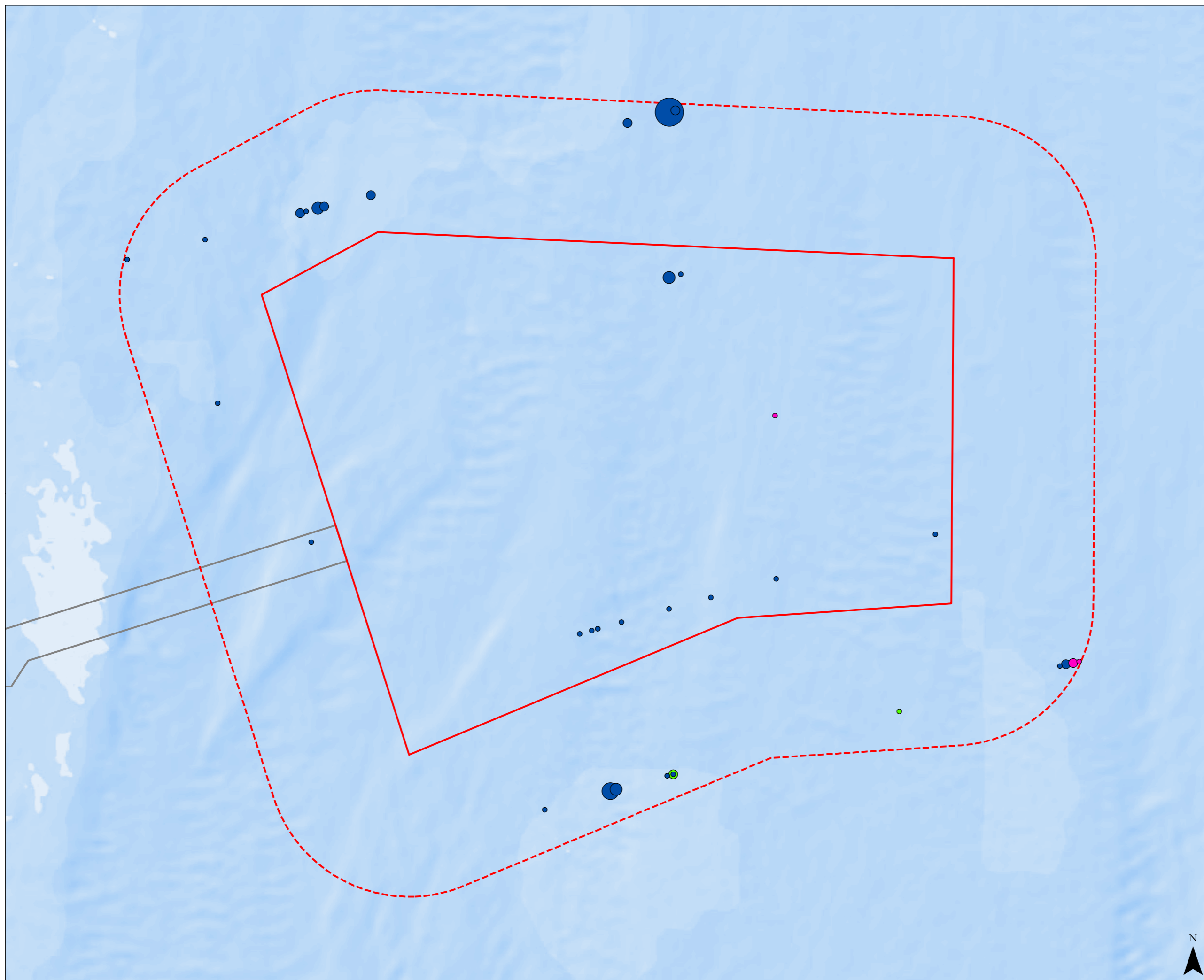
East Anglia ONE North

Figure 12.6.8

**Tern Species
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



- Legend:
- East Anglia ONE North Windfarm Site
 - 4km Buffer
 - Export Cable Corridor

Count

- 1
- 2 - 5
- 6 - 10
- 11 - 15

Season

- Autumn Migration
- Spring Migration
- Breeding

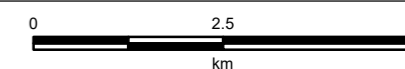
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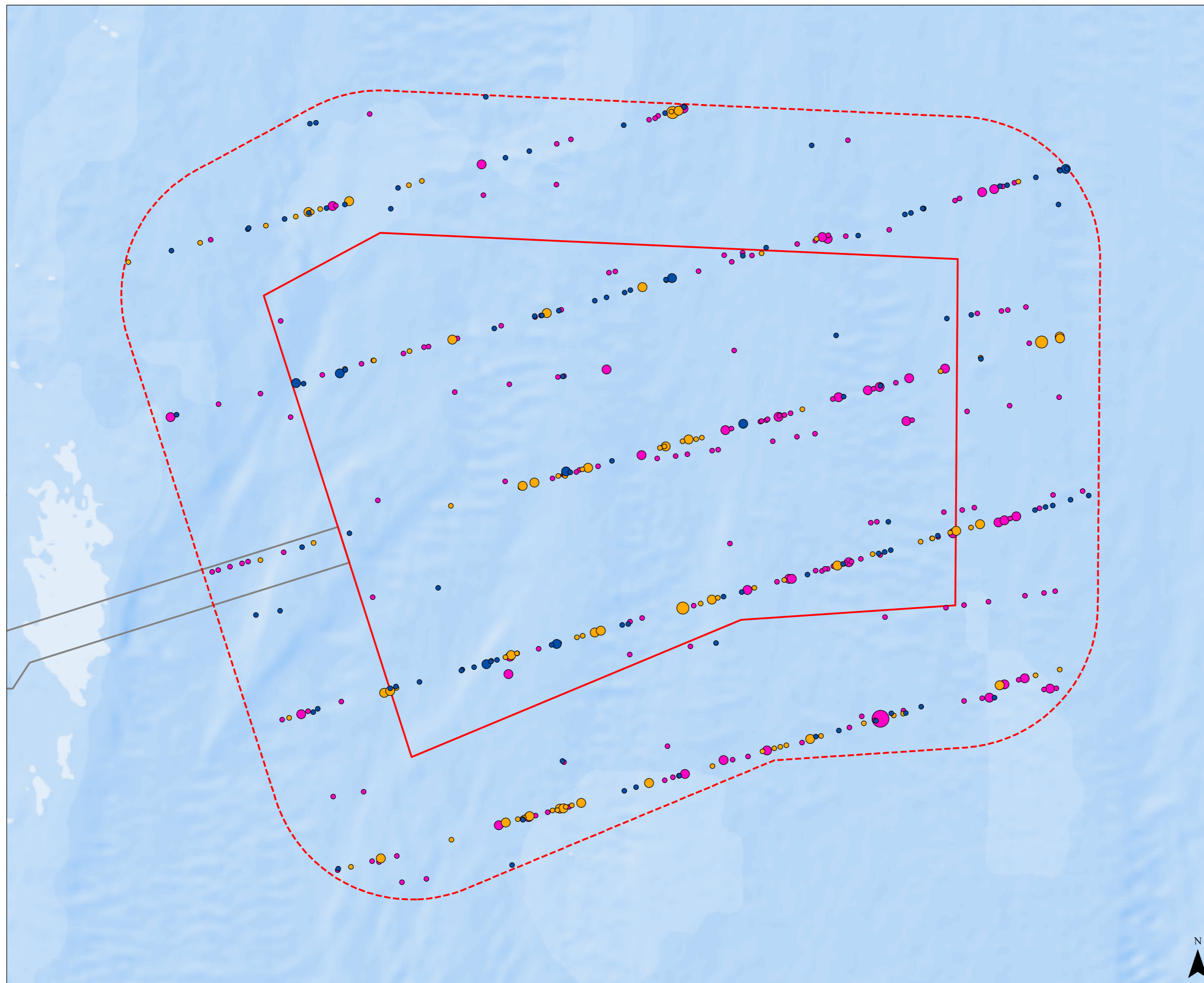
East Anglia ONE North

Figure 12.6.9

**Kittiwake
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



Legend:

- East Anglia ONE North Windfarm Site
- 4km Buffer
- Export Cable Corridor

Count

- 1
- 2 - 5
- 6 - 10

Species

- Black-headed Gull
- Common Gull
- Little Gull

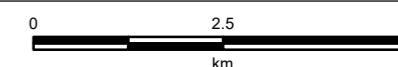
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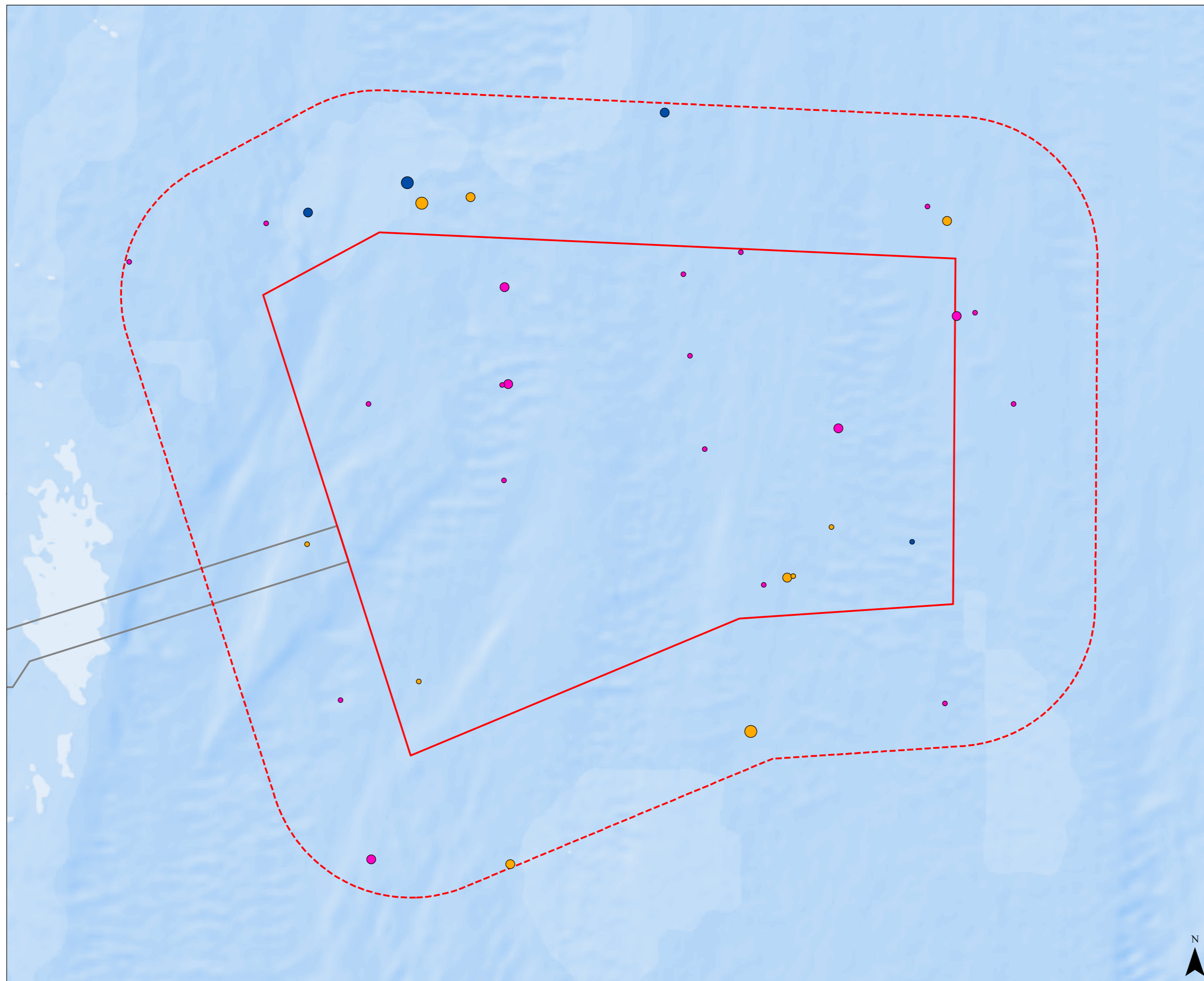
East Anglia ONE North

Figure 12.6.10

**Small Gull Species
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



Legend:

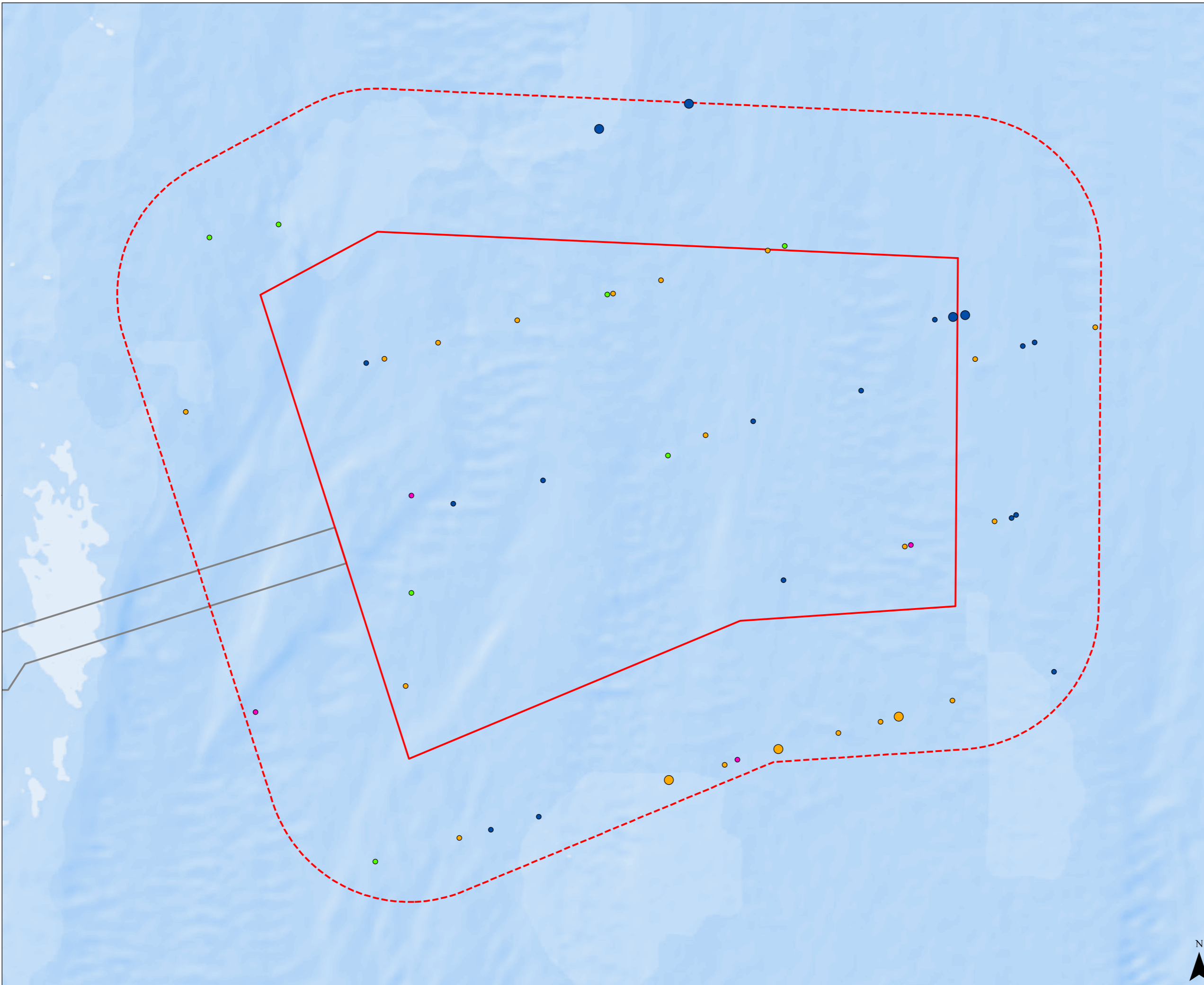
- East Anglia ONE North Windfarm Site
- 4km Buffer
- Export Cable Corridor

Count

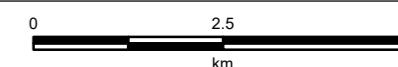
- 1
- 2 - 5

Season

- Autumn Migration
- Winter
- Spring Migration
- Breeding



Survey Data: APEM



- Legend:
- East Anglia ONE North Windfarm Site
 - 4km Buffer
 - Export Cable Corridor

Count

- 1
- 2 - 5

Season

- Breeding
- Non-breeding

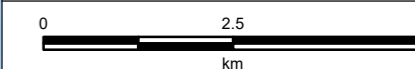
Survey Data: APEM



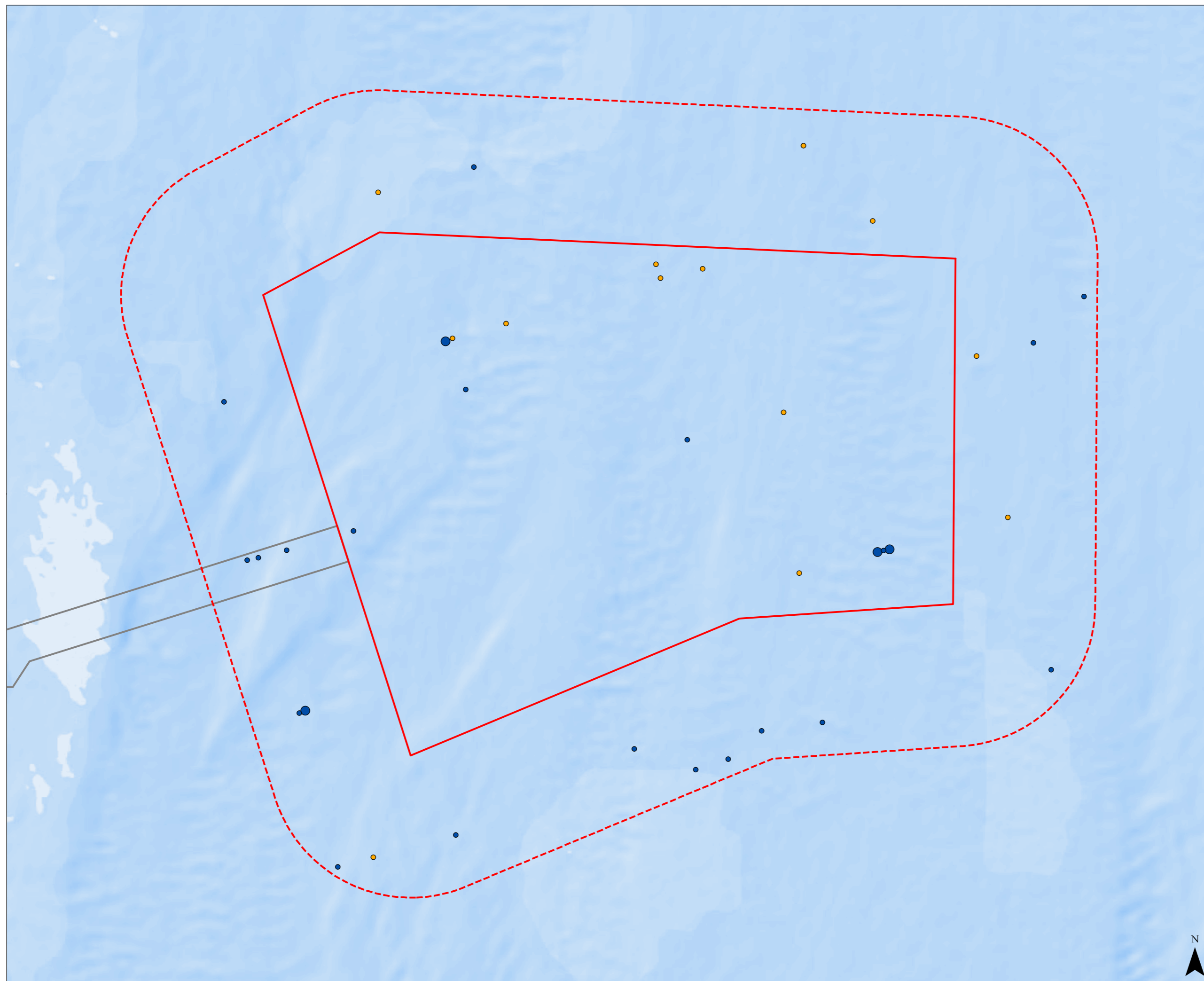
East Anglia ONE North

Figure 12.6.12

**Herring Gull
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



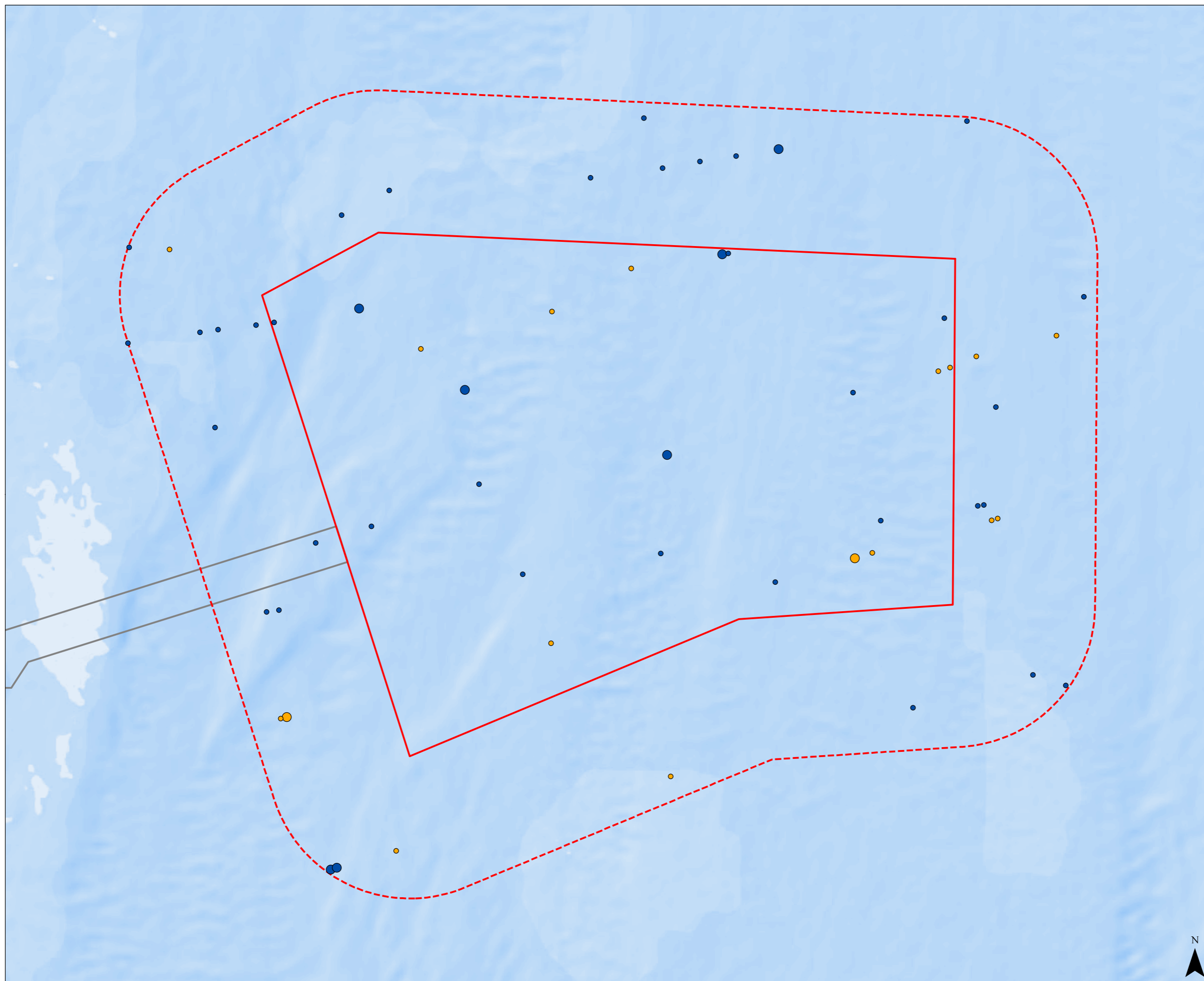
- Legend:
- East Anglia ONE North Windfarm Site
 - 4km Buffer
 - Export Cable Corridor

Count

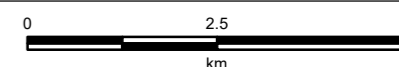
- 1
- 2 - 5

Season

- Breeding
- Non-breeding



Survey Data: APEM



Legend:

- East Anglia ONE North Windfarm Site
- 4km Buffer
- Export Cable Corridor

Count

- 1
- 2 - 5
- 6 - 10
- 21 - 45

Species

- Small Gull Species
- Large Gull Species

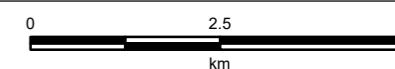
Survey Data: APEM



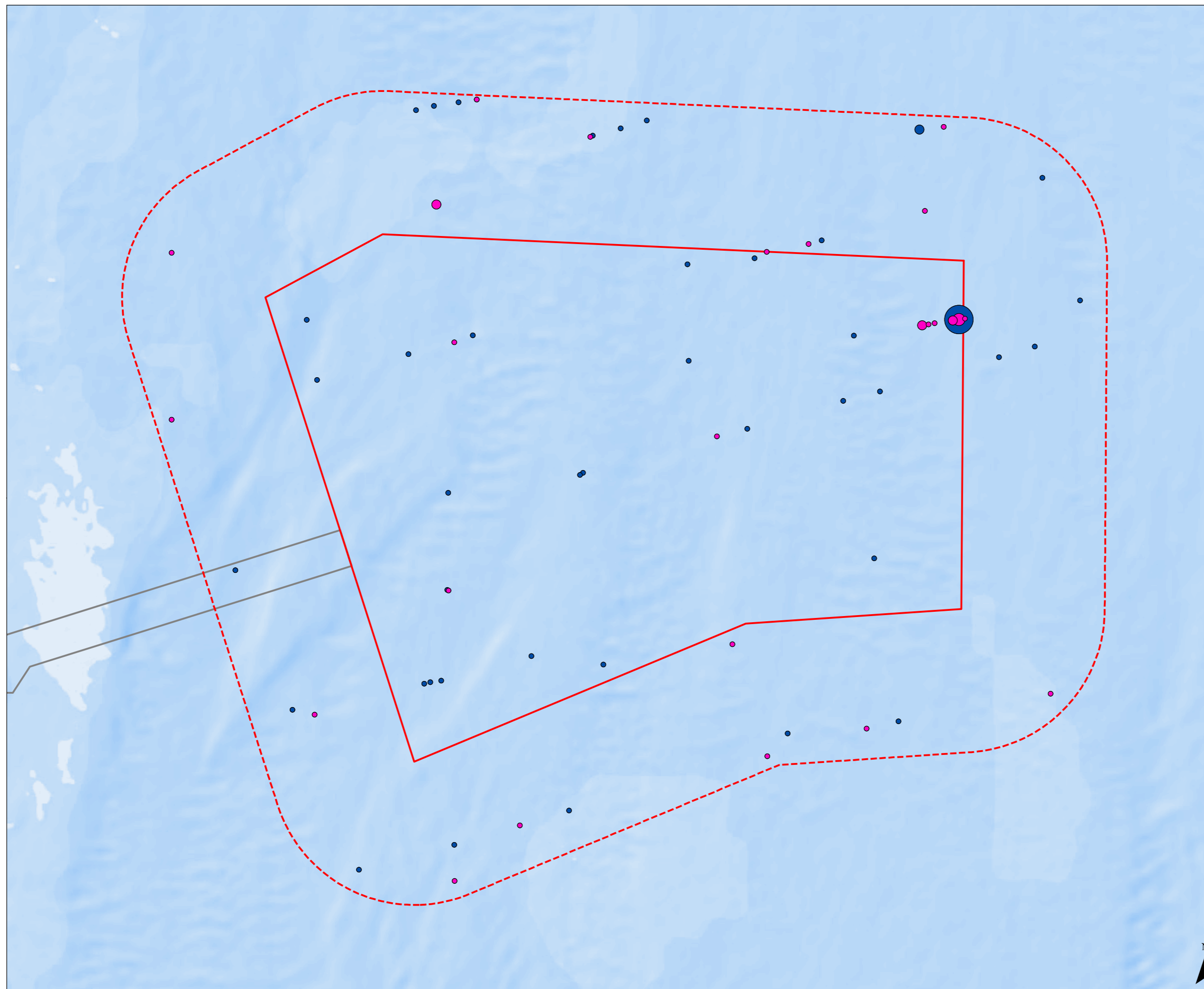
East Anglia ONE North

Figure 12.6.14

**Unidentified Gull Species
2016 - 2018**



MAP SCALE: 1:100,000 @ A3



East Anglia ONE North Offshore Windfarm

Appendix 12.2

Annex 7

East Anglia ONE North and East Anglia TWO Offshore Windfarms: Passage Great Skua Collision Risk Modelling

Environmental Statement Volume 3

Applicant: East Anglia ONE North Limited
Document Reference: 6.3.12.2.7
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Pursuant to APFP Regulation: 5(2)(a)

Author: Royal HaskoningDHV
Date: October 2019
Revision: Version 1

12.2.7 East Anglia ONE North and East Anglia TWO Offshore Windfarms: Passage Great Skua Collision Risk Modelling

12.2.7.1 Introduction

1. This note provides details of migrant Collision Risk Modelling (CRM) for migrating great skua (*Stercorarius skua*) for the East Anglia TWO and East Anglia ONE North offshore windfarms.
2. The assessment considers the potential effects on the total migratory populations. The assessment uses published approaches (Band, 2012; Wright et al., 2012), with updates with respect to population sizes (Furness, 2015) added where this was considered appropriate.
3. Great Skuas breed at a few sites on islands to the north of Britain and migrate to wintering sites off the coasts of southern Europe (Wernham et al., 2002). As a general rule, birds from west coast colonies probably migrate down the west coast of Britain and Ireland, while those from colonies in the Orkney and Shetland Isles probably migrate via the North Sea before returning northward around the north coast of Scotland, and then heading south along the west coast and into the Atlantic (Wright et al., 2012). This is considered in detail in Furness (2015), allowing the percentage allocation of the population to the two migration routes, known to be used by this species through UK waters, the North Sea and Channel area and the UK Western Waters (**Table 2**).
4. Great Skuas tend to avoid coasts when on migration, except during periods of bad weather (Wright et al., 2012); however, for this reason, there are potential issues in the use of SOSSMAT for the assessment of this species (Wright et al., 2012).
5. In general, great skua fly at heights below potential collision risk, with a tracking study indicating that in the presence of a hypothetical 22-250m collision risk window, only 3.6% of daytime great skua observations occurred within this height range (Ross-Smith et al., 2016). This increased to 5.7% of observations during twilight, and 7.2% in darkness.

12.2.7.2 Methods

6. Population sizes and information on great skua migrating behaviour from several sources were considered for inclusion in the assessment (Furness, 2015; Wright et al., 2012; WWT Consulting, 2014). Information from Furness (2015) was considered the most up to date, detailed and appropriate information and is the primary reference for the assessment.

7. Migration routes were obtained from the Strategic Ornithological Support Services (SOSS) Migration Assessment Tool (SOSSMAT) (Wright et al., 2012).
8. To select the migration routes relevant to the East Anglia TWO and East Anglia ONE North windfarm sites, the site boundaries were overlaid on the migration route dataset in a Geographical Information System (GIS) package (qGIS), and any migration routes intersecting either or both site boundaries marked as relevant to each respective assessment.
9. The sections of the European coastline defined in the SOSSMAT tool were reviewed and the relevant migrant route crossings selected for inclusion into the SOSSMAT route filter. For the proposed East Anglia TWO and East Anglia ONE North, this included crossings of sections of coastline which included a start or end point bordering the southern North Sea, which could have resulted in a crossing intersecting either windfarm site. The routes that were selected are presented in **Table 1**.

Table 1 Selected migrant routes (SOSSMAT Tool) used to calculate numbers of great skuas passing through the EA2 and EA1N sites.

Start-End Code	Connection Start	Connection End
EUNECE	Central Europe North Sea coast	England eastern English Channel coast
EUNENS	Central Europe North Sea coast	England North Sea coast
EUNNOR	Central Europe North Sea coast	Norway
EUNORK	Central Europe North Sea coast	Orkney
EUNSNS	Central Europe North Sea coast	Scottish mainland North Sea coast
EUNSHE	Central Europe North Sea coast	Shetland
EUNECE	Central Europe North Sea coast	England eastern English Channel coast
DENEUN	Denmark	Central Europe North Sea coast
DENENS	Denmark	England North Sea coast
ENSORK	England North Sea coast	Orkney
ENSSNS	England North Sea coast	Scottish mainland North Sea coast
ENSSHE	England North Sea coast	Shetland

10. The SOSSMAT tool generated a prediction of the percentage of the great skuas migrating through the southern North Sea which could encounter the East Anglia TWO and East Anglia ONE North windfarms on migration in a given season.
11. The total migrant population for each species considered at risk was obtained from Furness (2015). The number of birds passing through the North Sea and

Channel area and the UK Western Waters areas varied depending on the season in question (**Table 2**).

Table 2. Estimated number of great skuas migrating through the North Sea and Channel each migration season, based on data presented in Furness (2015).

Migration Season	UK BDMPS	BDMPS population migrating through North Sea and Channel	Total number of birds migrating through North Sea and Channel
Autumn (Aug to Oct)	35,892	54%	19,556
Spring (Mar to Apr)	33,575	25%	8,485

12. To generate the number of birds passing through each windfarm, the relevant BDMPS population size was multiplied by the relevant percentage of birds passing through each site according to the SOSSMAT tool.
13. For CRM, the “migrant collision risk” element of the spreadsheet was utilised. Input parameters with regard to great skua biometric parameters and windfarm parameters were as per **Annex 3** of **Appendix 12.1**.

12.2.7.3 Results

14. The number of great skuas migrating through EA2 and EA1N according to the SOSSMAT tool is presented in **Table 3**.

Table 3. Number of great skua passing through EA2 and EA1N offshore windfarms during the autumn and spring migration periods.

Season	EA2	EA1N
Autumn	232	218
Spring	535	505

15. Option two of the Band CRM calculated that, without avoidance, this number of birds passing through each windfarm would result in a single collision per month during the migration periods, equalling five collisions per year at each windfarm. However, when avoidance rates of 95% and above are factored in, zero collisions per year are predicted between migrating great skua and the East Anglia TWO and East Anglia ONE North offshore windfarms.

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Band, W. (2012) Using a collision risk model to assess bird collision risks for offshore wind farms. The Crown Estate Strategic Ornithological Support Services (SOSS) report SOSS-02. SOSS Website. Original published Sept 2011, extended to deal with flight height distribution data March 2012.

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Wernham, C.V., Toms, M.P., Marchant, J.H., Clark, J.A., Siriwardena, G.M. & Baillie, S.R.(eds) 2002. The Migration Atlas: movements of the birds of Britain and Ireland. T. & A.D. Poyser, London.

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**East Anglia TWO & East Anglia ONE North
Offshore Wind Farms**

Appendix 12.2

Offshore Ornithology

Annex 8

Migrant non-seabird collision risk modelling

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1 INTRODUCTION

1. This Annex provides a collision risk assessment for migrant non-seabird species which are considered to have the potential to cross the East Anglia TWO and/or East Anglia ONE North offshore wind farm sites on migration. The species assessed are those which have been included in recent assessments for other offshore wind farms in the southern North Sea. The assessment considers the potential effects on the total migratory populations and, for relevant species, on the Breydon Water Special Protection Area (SPA), Broadland SPA and North Norfolk Coast SPA populations. The assessment uses the data and methods provided in Wright et al. (2012) combined with the migrant extension of the Band (2012) Collision Risk Model (CRM).

2 METHODS

2. The species considered in this assessment are listed in Table 1.

Table 1. Migrant non-seabird species assessed for collision risk

Common name	Scientific name
Avocet (nonbreeding)	<i>Recurvirostra avosetta</i>
Bar-tailed godwit	<i>Limosa lapponica</i>
Bewick's swan	<i>Cygnus columbianus bewickii</i>
Common scoter	<i>Melanitta nigra</i>
Curlew	<i>Numenius arquata</i>
Dark-bellied brent goose	<i>Branta bernicla bernicla</i>
Dunlin	<i>Calidris alpina</i>
Gadwall	<i>Anas strepera</i>
Golden plover	<i>Pluvialis apricaria</i>
Goldeneye	<i>Bucephala clangula</i>
Grey plover	<i>Pluvialis squatarola</i>
Knot	<i>Calidris canutus</i>
Lapwing	<i>Vanellus vanellus</i>
Marsh harrier	<i>Circus aeruginosus</i>
Oystercatcher	<i>Haematopus ostralegus</i>
Pintail	<i>Anas acuta</i>
Pochard	<i>Aythya ferina</i>
Redshank	<i>Tringa totanus</i> (including each sub-species)
Ringed plover	<i>Charadrius hiaticula</i>
Sanderling	<i>Calidris alba</i>
Shoveler	<i>Anas clypeata</i>
Teal	<i>Anas crecca</i>
Tufted duck	<i>Aythya fuligula</i>
Turnstone	<i>Arenaria interpres</i>
Wigeon	<i>Anas penelope</i>

3. Relevant population sizes and migration routes were obtained from the Strategic Ornithological Support Services (SOSS) Migration Assessment Tool (hereafter referred to as SOSSMAT; Wright et al. 2012). The SOSSMAT Geographical Information System tool enables estimation of the proportion of migrating populations which could encounter offshore wind farms. The species-specific migration routes were derived by Wright et al. (2012) from a review of literature, and the tool enables identification of those routes which cross user-defined wind farm footprints. The following steps were taken for this assessment:
 - i. The East Anglia TWO and East Anglia ONE North wind farm sites were used to filter the SOSSMAT migration routes to identify those which crossed the wind farm sites.
 - ii. The sections of the European coastline defined in the SOSSMAT tool were reviewed and the relevant ones selected (i.e. for East Anglia TWO and East Anglia ONE North these were ones which included a start or end point which bordered the southern North Sea).
 - iii. Following the above, for each species the SOSSMAT tool generated a prediction of the percentage of each population which could encounter the wind farm on migration. It should be noted that for each species this is an estimate of the percentage of the total number of potential migration paths which could cross the wind farms and therefore the same value applies to both the total migratory population and the SPA sub-populations.
 - iv. The total migrant population for each species considered at risk was obtained from Wright et al. (2012) and was multiplied by the percentage at risk (obtained at step iii) to estimate the number of individuals which could cross each wind farm site in each migration period. This was the at-risk population used as input to the collision risk model.
 - v. For all the relevant species, it was assumed that there were two migration periods per year (e.g. spring and autumn) and therefore in order to assess risks annually the at-risk number was doubled.
4. This assessment considers potential impacts on the wider populations of each species as well as the populations at the Breydon Water SPA, Broadland SPA and North Norfolk Coast SPA.
5. Collision mortality was calculated using the migrant extension of the Band (2012) CRM. To estimate the proportion of the total collisions which could affect the SPA populations, it was assumed this would be in proportion to the size of the SPA population relative to the total population (e.g. if the SPA population was 50 from a total population of 200 it would be assumed that 25% of the collisions could be attributed to the SPA).
6. Parameters for the CRM, such as the proportion at collision height (PCH) and flight speed were obtained from a review of the relevant literature. The total migrant population for each species and for those SPA species considered likely to pass through the wind farm sites are provided in Table 2 and the species-specific collision parameters are listed in Table 3.
7. Table 2 provides an estimate of the total population likely to cross the southern North Sea. For all species it has been assumed this is 100%, on the basis of the information in Wright et al. (2012). The percentage of the total population estimated to cross the East Anglia TWO and/or East Anglia ONE North wind farms is also listed in Table 2. These percentages were generated as an output from the SOSSMAT tool which provides GIS files to enable selection of routes which cross specified areas (in this case the East Anglia TWO and East Anglia ONE North wind farm polygons).

Table 2. Percentage of non-seabird migrant routes with potential to cross the East Anglia TWO and/or East Anglia ONE North Wind Farm sites (obtained from SOSSMAT) and relevant total and SPA population sizes.

Species	SOSSMAT % crossing East Anglia TWO	SOSSMAT % crossing East Anglia ONE North	Population sizes			
			Total migrants (Wright et al. 2012)	Breydon Water SPA	Broadland SPA	North Norfolk Coast SPA
Avocet	20.38	9.19	7,500	33	-	153
Bar-tailed godwit	4.7	3.63	54,280	-	-	1,236
Bewick's swan	17.1	8.08	7,380	391	320	-
Common scoter	4.36	3.3	123,190	-	-	-
Curlew	4.85	3.67	140,000	-	-	-
Dark-bellied brent goose	20.06	9.65	91,000	-	-	11,512
Dunlin	8.86	4.54	438,480	2,870	-	-
Gadwall	9.49	5.88	25,630	-	605	-
Golden plover	6.23	3.88	566,700	5,040	-	2,667
Goldeneye	4.75	3.59	2,9665	-	-	-
Grey plover	4.53	3.37	49,315	-	-	-
Knot	4.38	3.32	338,970	-	-	10,801
Lapwing*	4.53	3.37	465,000	24,940	-	-
Marsh harrier	0	0	402	-	21	14
Oystercatcher	4.55	3.44	320,000	-	-	-
Pintail	4.36	3.3	30,235	-	-	1,139
Pochard	6.27	4.46	75,780		1,230	-
Redshank (britannica)	5.88	4.44	38,800	-	-	-
Redshank (robusta)	5.64	4.26	150,000	-	-	2,998
Redshank (totanus)	4.68	3.54	2,5000	-	-	-
Ringed plover	4.57	3.46	48,580	-	-	1,256
Sanderling	4.38	3.32	22,680	-	-	-
Shoveler	6.27	4.46	20,545	140	401	-
Teal	4.36	3.3	255,010	-	3,869	-
Tufted duck	4.34	3.28	146,610	-	1,336	-
Turnstone	4.35	3.29	48,000	-	-	-
Wigeon	4.35	3.29	522,370	4,320	6,435	14,039

*APEM (2014) present calculation of migrant lapwing numbers derived from Wright et al. (2012)

Table 3. Species-specific biometrics and collision model parameters. Note that the probability of collision for a single rotor transit (p.collusion) was calculated using the ‘single transit collision risk’ tab of the Band (2012) CRM spreadsheet. Biometric estimates were those reported in APEM (2014).

Species	Length (m)	Wingspan (m)	Flight speed (ms⁻¹)	PCH	Probability of collision for single rotor transit (p.collusion; this was identical for both windfarms)
Avocet	0.44	0.79	11.10	25	0.0606
Bar-tailed godwit	0.38	0.75	18.30	25	0.0476
Bewick's swan	1.27	2.11	18.50	50	0.0678
Common scoter	0.58	1.15	17.70	1	0.0479
Curlew	0.49	0.84	22.10	25	0.0570
Dark-bellied brent goose	0.55	0.90	13.90	30	0.0530
Dunlin	0.18	0.40	15.30	25	0.0448
Gadwall	0.51	0.90	16.90	15	0.0517
Golden plover	0.28	0.72	17.90	25	0.0460
Goldeneye	0.46	0.72	21.20	15	0.0474
Grey plover	0.28	0.77	17.90	25	0.0462
Knot	0.24	0.59	20.10	25	0.0440
Lapwing*	0.30	0.84	11.90	25	0.0543
Marsh harrier	0.52	1.22	12.00	50	0.0614
Oystercatcher	0.42	0.83	13.90	25	0.0535
Pintail	0.66	0.95	20.60	15	0.0516
Pochard	0.46	0.77	21.20	15	0.0475
Redshank	0.28	0.62	18.30	25	0.0454
Ringed plover	0.19	0.52	10.60	25	0.0534
Sanderling	0.20	0.42	17.70	25	0.0436
Shoveler	0.48	0.77	16.90	15	0.0507
Teal	0.36	0.61	16.90	15	0.0478
Tufted duck	0.44	0.70	21.20	15	0.0470
Turnstone	0.23	0.54	17.70	25	0.0446
Wigeon	0.48	0.80	17.10	15	0.0506

3 RESULTS

3.1 Collision risk estimates

- Collision mortality estimates are presented for all species with a range of avoidance rates from 98% to 99.8%, with the appropriate precautionary rate for each species highlighted in the grey cells (Tables 4 and 5). This was 98% for all but two species (higher rates have been proposed by Scottish Natural Heritage (SNH) for collision assessment of Bewick’s swan, 99.5% and dark-bellied brent goose, 99.8%; SNH 2013, 2017).

Table 4. Migrant non-seabird annual collision risks for East Anglia TWO wind farm. These include two migrations for each species (i.e. spring and autumn). Grey cells indicate the mortality for the Statutory Natural Conservation Bodies-recommended species-specific precautionary avoidance rate.

Species	Collision Mortality Estimates (for these % avoidance rates)				Collisions as percentage of total population	Number of collisions assigned to:		
	98	99	99.5	99.8		Breydon Water SPA	Broadland SPA	North Norfolk Coast SPA
Avocet	0.5	0.3	0.1	0.1	0.0068	0.0022		0.0103
Bar-tailed godwit	0.7	0.3	0.2	0.1	0.0012			0.0151
Bewick's swan	0.9	0.5	0.2	0.1	0.0032	0.0124	0.0102	
Common scoter	0.1	0.0	0.0	0.0	0.0000			
Curlew	2.1	1.1	0.5	0.2	0.0015			
Dark-bellied brent goose	6.4	3.2	1.6	0.6	0.0007			0.0804
Dunlin	9.5	4.8	2.4	1.0	0.0022	0.0624		
Gadwall	0.4	0.2	0.1	0.0	0.0016		0.0049	
Golden plover	8.9	4.4	2.2	0.9	0.0016	0.0791		0.0418
Goldeneye	0.2	0.1	0.1	0.0	0.0007			
Grey plover	0.6	0.3	0.1	0.1	0.0011			
Knot	3.6	1.8	0.9	0.4	0.0011			0.1140
Lapwing	6.3	3.1	1.6	0.6	0.0013	0.3359		
Marsh harrier	0.0	0.0	0.0	0.0	0.0000			
Oystercatcher	4.3	2.1	1.1	0.4	0.0013			
Pintail	0.2	0.1	0.1	0.0	0.0007			0.0084
Pochard	0.7	0.4	0.2	0.1	0.0010		0.0060	
Redshank (<i>britannica</i>)	0.6	0.3	0.1	0.1	0.0015			
Redshank (<i>robusta</i>)	2.1	1.1	0.5	0.2	0.0014			0.0420
Redshank (<i>totanus</i>)	0.3	0.1	0.1	0.0	0.0012			
Ringed plover	0.6	0.3	0.2	0.1	0.0013			0.0168
Sanderling	0.2	0.1	0.1	0.0	0.0010			
Shoveler	0.2	0.1	0.1	0.0	0.0010	0.0015	0.0021	
Teal	1.7	0.9	0.4	0.2	0.0007		0.0132	
Tufted duck	1.0	0.5	0.2	0.1	0.0007		0.0045	
Turnstone	0.5	0.3	0.1	0.1	0.0011	0.0000		
Wigeon	3.8	1.9	0.9	0.4	0.0007	0.0312	0.0233	0.1015

Table 5. Migrant non-seabird annual collision risks for East Anglia ONE North wind farm. These include two migrations for each species (i.e. spring and autumn). Grey cells indicate the mortality for the Statutory Natural Conservation Bodies-recommended species-specific precautionary avoidance rate.

Species	Collision Mortality Estimates (for these % avoidance rates)				Collisions as percentage of total population	Number of collisions assigned to:		
	98	99	99.5	99.8		Breydon Water SPA	Broadland SPA	North Norfolk Coast SPA
Avocet	0.3	0.1	0.1	0.0	0.0035	0.0012		0.0054
Bar-tailed godwit	0.6	0.3	0.1	0.1	0.0011			0.0136
Bewick's swan	0.5	0.3	0.1	0.1	0.0017	0.0068	0.0056	
Common scoter	0.0	0.0	0.0	0.0	0.0000			
Curlew	1.9	0.9	0.5	0.2	0.0013			
Dark-bellied brent goose	3.6	1.8	0.9	0.4	0.0004			0.0450
Dunlin	5.7	2.8	1.4	0.6	0.0013	0.0371		
Gadwall	0.3	0.1	0.1	0.0	0.0012		0.0035	
Golden plover	6.4	3.2	1.6	0.6	0.0011	0.0572		0.0303
Goldeneye	0.2	0.1	0.0	0.0	0.0006			
Grey plover	0.5	0.2	0.1	0.0	0.0010			
Knot	3.2	1.6	0.8	0.3	0.0009			0.1004
Lapwing	5.4	2.7	1.4	0.5	0.0012	0.2904		
Marsh harrier	0.0	0.0	0.0	0.0	0.0000			
Oystercatcher	3.7	1.9	0.9	0.4	0.0012			
Pintail	0.2	0.1	0.0	0.0	0.0007			0.0074
Pochard	0.6	0.3	0.2	0.1	0.0008		0.0050	
Redshank (<i>britannica</i>)	0.5	0.2	0.1	0.0	0.0013			
Redshank (<i>robusta</i>)	1.8	0.9	0.5	0.2	0.0012			0.0369
Redshank (<i>totanus</i>)	0.3	0.1	0.1	0.0	0.0010			
Ringed plover	0.6	0.3	0.1	0.1	0.0012			0.0148
Sanderling	0.2	0.1	0.1	0.0	0.0009			
Shoveler	0.2	0.1	0.0	0.0	0.0009	0.0012	0.0017	
Teal	1.5	0.8	0.4	0.2	0.0006		0.0117	
Tufted duck	0.9	0.4	0.2	0.1	0.0006		0.0039	
Turnstone	0.4	0.2	0.1	0.0	0.0009	0.0000		
Wigeon	3.3	1.7	0.8	0.3	0.0006	0.0275	0.0205	0.0892

9. At East Anglia TWO wind farm, 16 species were estimated to be at risk of 1 or fewer collisions per year: avocet, bar-tailed godwit, Bewick's swan, common scoter, dark-bellied brent goose, gadwall, goldeneye, grey plover, marsh harrier, pintail, pochard, ringed plover, sanderling, shoveler, tufted duck and turnstone.

10. For East Anglia ONE North wind farm, 16 species were estimated to be at risk of 1 or fewer collisions per year: avocet, bar-tailed godwit, Bewick's swan, common scoter, dark-bellied brent

goose, gadwall, goldeneye, grey plover, marsh harrier, pintail, pochard, ringed plover, sanderling, shoveler, tufted duck and turnstone.

11. At East Anglia TWO wind farm, nine species were estimated to be at risk of between 1 and 10 collisions per year: curlew, dunlin, golden plover, knot, lapwing, oystercatcher, redshank (summed across all races), teal and wigeon.
12. For East Anglia ONE North wind farm, nine species were estimated to be at risk of between 1 and 10 collisions per year: curlew, dunlin, golden plover, knot, lapwing, oystercatcher, redshank (summed across all races), teal and wigeon.
13. At neither East Anglia TWO nor East Anglia ONE North were any species predicted to have annual collisions of 10 or more.
14. There were no species recorded at East Anglia TWO or East Anglia ONE North wind farms for which the total annual collisions exceeded 0.01% of the migratory population.
15. Although it is acknowledged that there may be connectivity with designated populations at other SPAs along the English east coast, given the extremely low numbers at risk, overall the number of individuals from other SPAs that this could include, and hence the proportion of the migrant populations this would represent, are likely to be very small and therefore it is appropriate that only the three named SPAs have been considered.
16. For all species, the background mortality rate would only be increased by more than 1% (the threshold beneath which additional mortality is considered to have an undetectable effect) due to the predicted annual collision risks if natural mortality was less than 1% (i.e. the annual survival rate would need to be at least 99%). This is much lower than the natural mortality rates for any of the species assessed, most have natural mortality of at least 10% per year. Thus, the effects would only be expected to exceed the 1% threshold if collision risk was more than five times higher, and even then that would only be the case for those species with natural mortality rates at the lower end of the range, such as geese and swans.
17. Consequently, the collision risk predictions for all the migrant non-seabird species included in the assessment have resulted in negligible magnitude impacts which are therefore of minor or negligible significance.
18. Due to the low numbers of collisions apportioned to the relevant SPA populations, no adverse effects on the integrity of the Breydon Water SPA, Broadland SPA and North Norfolk Coast SPA due to migrant collisions at either the East Anglia TWO or East Anglia ONE North wind farms alone.

3.2 Cumulative and in-combination collision risk estimates: East Anglia TWO, East Anglia ONE North, Norfolk Boreas, Norfolk Vanguard and East Anglia THREE

19. Consideration has also been given to the potential combined mortality from the East Anglia TWO and East Anglia ONE North wind farms with Norfolk Vanguard, Norfolk Boreas and East Anglia THREE offshore wind farms (

20.

21. Table 6). Collision mortalities for Norfolk Vanguard and Norfolk Boreas were taken from MacArthur Green (2019a, 2019b) and those for East Anglia THREE were taken from APEM (2014).

Table 6. Migrant non-seabird annual collision risks at East Anglia TWO, East Anglia ONE North, Norfolk Boreas, Norfolk Vanguard and East Anglia THREE.

Species	East Anglia TWO	East Anglia ONE North	Norfolk Boreas	Norfolk Vanguard	East Anglia THREE	Cumulative total	In-combination mortality assigned to SPA populations		
							Breydon Water SPA	Broadland SPA	North Norfolk Coast SPA
Avocet	0.5	0.3	0.7	0.8	N/A	2.3	0.01		0.05
Bar-tailed godwit	0.7	0.6	1.9	2.5	0	5.7			0.13
Bewick's swan	0.9	0.1	0.3	0.4	N/A	1	0.05	0.04	
Common scoter	0.1	0	0.2	0.2	0	0.5			
Curlew	2.1	1.9	6.0	6.5	1	17.5			
Dark-bellied brent goose	0.6	0.4	0.8	1.0	1*	3.8			0.48
Dunlin	9.5	5.7	23.2	28.2	12	78.6	0.51		
Gadwall	0.4	0.3	0.7	0.9	0	2.3		0.05	
Golden plover	8.9	6.4	24.7	30.8	9	79.8	0.71		0.38
Goldeneye	0.2	0.2	0.6	0.8	0	1.8			
Grey plover	0.6	0.5	1.6	2.0	1	5.7			
Knot	3.6	3.2	9.9	12.9	1	30.6			0.98
Lapwing*	6.3	5.4	17.8	23.3	4	56.8	3.05		
Marsh harrier	0	0	0.0	0.0	0	0		0.00	0.00
Oystercatcher	4.3	3.7	12.1	15.9	2	38			
Pintail	0.2	0.2	0.6	0.8	0	1.8			0.07
Pochard	0.7	0.6	2.0	2.6	0	5.9		0.10	
Redshank	3.0	2.6	8	10.6	0	35.7			0.17
Ringed plover	0.6	0.6	1.9	2.5	1	6.6			
Sanderling	0.2	0.2	0.7	0.9	0	2	0.02	0.05	
Shoveler	0.2	0.2	0.6	0.8	1	2.8		0.22	
Teal	1.7	1.5	4.9	6.4	0	14.5		0.07	
Tufted duck	1	0.9	2.7	3.6	0	8.2			
Turnstone	0.5	0.4	1.4	1.9	1	5.2	0.27	0.40	0.88
Wigeon	3.8	3.3	10.6	14.0	1	32.7			0.17

* For East Anglia THREE Offshore Wind Farm an avoidance rate of 98% was used for all species. The dark-bellied brent goose collision has therefore been adjusted to that expected with an avoidance rate of 99.8% (i.e. multiplied by 0.1).

22. The combined total mortality (Table 6) is higher than that for East Anglia TWO alone (Table 4) and East Anglia ONE North alone (Table 5), and consequently the natural mortality rate at which these additions could exceed an increase in 1% is slightly higher. For two species at a natural mortality rate of 2% (i.e. annual survival of 98%) the cumulative totals in Table 6 would result in increases in background mortality of more than 1% (the threshold below which additional mortality would be considered undetectable against natural variations). These species are avocet and redshank. However, these species are likely to have natural mortality in the region of 10 times this (i.e. natural annual survival of around 80%) and therefore the effects of the cumulative collisions predicted are all well below the threshold of detection.
23. The in-combination mortality predictions were all less than one bird of any species at any of the SPAs, and would all result in undetectable effects, with the exception of lapwing, for which 3 collisions were predicted per year for the Breydon Water SPA population. However, since this population is almost 25,000 individuals this level of additional mortality would remain undetectable.
24. Therefore the conclusions with respect to the populations at Breydon Water SPA, Broadland SPA and North Norfolk Coast SPA are also unchanged from those for the project alone, and the addition of potential mortality at the Norfolk Boreas, Norfolk Vanguard and the East Anglia THREE Offshore Wind Farms does not alter the conclusions reported for East Anglia TWO or East Anglia ONE North alone; there would no adverse effects on the integrity of any of the SPA populations as result of in-combination collisions at offshore wind farms in the former East Anglia zone.

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