



Spiorad na Mara Offshore Wind Farm

Offshore Project

Environmental Impact Assessment Report

Annex 14.1.4.A: MRSea Unapportioned and Uncorrected Abundance and Density Estimates, Volume 2c

Document Reference No.: N/A

Date: February 2026



Quality Control Page

Document details	
Document title	Offshore Project Environmental Impact Assessment Report
Document subtitle	Annex 14.1.4.A: MRSea Unapportioned and Uncorrected Abundance and Density Estimates
Document Reference No.	N/A
Date	February 2026
Version	1.0
Author	NIRAS
Client Name	Sporad na Mara Limited

Document history						
Version	Revision	Issued	Checked	Approved	Date	Comments
1.0	A	WSP	WSP	SnM Ltd	February 2026	Final for submission

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1 ANNEX 14.1.4.A: MRSEA UNAPPORTIONED AND UNCORRECTED ABUNDANCE AND DENSITY ESTIMATES

1.1 INTRODUCTION

1.1.1 This document is an appendix to the **Annex 14.1.4 MRSea Modelling Report, Volume 2c** of the **Appendix 14.1: Ornithology Baseline Report, Volume 2c**. The tables in this annex set out the MRSea unapportioned and uncorrected abundance and density estimates for the following species:

- Kittiwake;
- Gannet;
- Guillemot;
- Razorbill;
- Puffin.

1.1.2 For each species listed above, this appendix sets out the MRSea unapportioned and uncorrected abundance and density estimates for the following areas:

- Turbine Area;
- Turbine Area plus 2 km buffer;
- Turbine Area plus 4 km buffer.

1.1.3 As not all species were modelled in every survey (see **Annex 14.1.4, Volume 2c**), "NA" in the tables indicates where model results are unavailable.

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1.2 KITTIWAKE

1.2.1 TURBINE AREA

Table 1-1 Kittiwake MRSea unapportioned and uncorrected abundance estimates (Turbine Area)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	7	3	26	6.1	0	0	1	0	7	3	24	6
S02 – April 2022	14	5	63	15.4	10	3	44	10.7	4	1	19	4.7
S03 – May 2022	33	23	53	7.8	6	4	10	1.4	27	19	44	6.4
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	1	0	22	6.6	1	0	14	4.3	0	0	8	2.3
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S08 – October 2022	234	169	349	45.8	56	41	84	11.0	177	128	265	34.8
S09 – November 2022	98	69	142	18.4	3	2	4	0.5	95	67	138	17.9
S10 – December 2022	32	21	56	9.3	0	0	0	0.0	32	21	56	9.3
S11 – January 2023	561	451	710	66.3	66	53	84	7.8	495	398	626	58.5
S12 – February 2023	138	95	197	26.2	44	31	63	8.4	93	65	133	17.7
S13 – March 2023	117	60	264	51.4	61	32	139	27.1	55	28	125	24.3
S14 – April 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S15 – May 2023	2	1	12	3.6	0	0	0	0.0	2	1	12	3.6
S16 – June 2023	0	0	0	0.0	0	0	0	0.0	0	0	0	0.0
S17 – July 2023	3	1	14	4.3	1	0	3	1.0	2	1	11	3.3
S18 – August 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S19 – September 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S20 – October 2023	13	5	44	16.8	4	1	13	4.8	9	3	31	12.0
S21 – November 2023	28	18	55	10.7	2	1	3	0.7	26	17	52	10.0
S22 – December 2023	31	18	64	11.9	0	0	0	0.0	31	18	64	11.9
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	134	92	202	28.7	36	25	54	7.7	98	68	148	21.0

Table 1-2 Kittiwake MRSea unapportioned and uncorrected density estimates (Turbine Area)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	0.05	0.02	0.18	0.04	0.00	0.00	0.01	0.00	0.05	0.02	0.17	0.04
S02 – April 2022	0.10	0.03	0.45	0.11	0.07	0.02	0.31	0.08	0.03	0.01	0.14	0.03
S03 – May 2022	0.24	0.16	0.38	0.06	0.04	0.03	0.07	0.01	0.19	0.14	0.31	0.05
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	0.01	0.00	0.15	0.05	0.00	0.00	0.10	0.03	0.00	0.00	0.05	0.02
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S08 – October 2022	1.67	1.20	2.49	0.33	0.40	0.29	0.60	0.08	1.26	0.91	1.89	0.25
S09 – November 2022	0.70	0.49	1.01	0.13	0.02	0.01	0.03	0.00	0.68	0.48	0.98	0.13
S10 – December 2022	0.23	0.15	0.40	0.07	0.00	0.00	0.00	0.00	0.23	0.15	0.40	0.07
S11 – January 2023	4.00	3.22	5.06	0.47	0.47	0.38	0.60	0.06	3.53	2.84	4.47	0.42
S12 – February 2023	0.98	0.68	1.40	0.19	0.32	0.22	0.45	0.06	0.66	0.46	0.95	0.13
S13 – March 2023	0.83	0.43	1.88	0.37	0.44	0.23	0.99	0.19	0.39	0.20	0.89	0.17
S14 – April 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S15 – May 2023	0.02	0.00	0.09	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.09	0.03
S16 – June 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S17 – July 2023	0.02	0.01	0.10	0.03	0.00	0.00	0.02	0.01	0.02	0.00	0.08	0.02
S18 – August 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S19 – September 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S20 – October 2023	0.09	0.03	0.31	0.12	0.03	0.01	0.09	0.03	0.07	0.02	0.22	0.09
S21 – November 2023	0.20	0.13	0.40	0.08	0.01	0.01	0.02	0.00	0.18	0.12	0.37	0.07
S22 – December 2023	0.22	0.13	0.46	0.08	0.00	0.00	0.00	0.00	0.22	0.13	0.46	0.08
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	0.95	0.66	1.44	0.20	0.26	0.18	0.39	0.05	0.70	0.48	1.06	0.15

1.2.2 TURBINE AREA PLUS 2 KM BUFFER

Table 1-3 Kittiwake MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 2 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	19	9	54	11.9	1	0	3	0.6	18	9	51	11.3
S02 – April 2022	30	12	133	35.6	21	8	93	24.7	9	4	41	10.9
S03 – May 2022	43	32	65	8.7	8	6	12	1.6	35	26	54	7.1
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	3	0	45	13.1	2	0	29	8.5	1	0	15	4.6
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S08 – October 2022	367	279	536	64.1	88	67	129	15.4	279	212	407	48.6
S09 – November 2022	181	130	261	32.1	5	4	8	0.9	175	127	253	31.2
S10 – December 2022	43	30	72	11.0	0	0	0	0.0	43	30	72	11.0
S11 – January 2023	996	819	1,235	105.9	117	96	145	12.5	879	722	1,090	93.5

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S12 – February 2023	409	305	537	58.2	132	98	173	18.8	277	206	364	39.5
S13 – March 2023	319	198	585	100.1	168	104	308	52.8	151	93	276	47.3
S14 – April 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S15 – May 2023	7	2	32	8.2	0	0	0	0.0	7	2	32	8.2
S16 – June 2023	0	0	0	0.0	0	0	0	0.0	0	0	0	0.0
S17 – July 2023	23	6	96	33.7	5	1	23	8.0	17	5	73	25.6
S18 – August 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S19 – September 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S20 – October 2023	32	15	84	26.8	9	4	24	7.7	23	11	60	19.2
S21 – November 2023	45	30	90	20.0	3	2	6	1.3	42	28	84	18.8
S22 – December 2023	53	32	105	19.1	0	0	0	0.0	53	32	105	19.1
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	325	248	465	56.5	87	66	124	15.1	238	182	340	41.4

Table 1-4 Kittiwake MRSea unapportioned and uncorrected density estimates (Turbine Area plus 2 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	0.07	0.04	0.21	0.05	0.00	0.00	0.01	0.00	0.07	0.03	0.20	0.04
S02 – April 2022	0.12	0.05	0.51	0.14	0.08	0.03	0.35	0.09	0.04	0.01	0.16	0.04
S03 – May 2022	0.16	0.12	0.25	0.03	0.03	0.02	0.04	0.01	0.13	0.10	0.20	0.03
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	0.01	0.00	0.17	0.05	0.01	0.00	0.11	0.03	0.00	0.00	0.06	0.02
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S08 – October 2022	1.40	1.06	2.04	0.24	0.34	0.26	0.49	0.06	1.06	0.81	1.55	0.19

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S09 – November 2022	0.69	0.50	0.99	0.12	0.02	0.01	0.03	0.00	0.67	0.48	0.97	0.12
S10 – December 2022	0.16	0.11	0.27	0.04	0.00	0.00	0.00	0.00	0.16	0.11	0.27	0.04
S11 – January 2023	3.80	3.12	4.71	0.40	0.45	0.37	0.55	0.05	3.35	2.75	4.15	0.36
S12 – February 2023	1.56	1.16	2.05	0.22	0.50	0.37	0.66	0.07	1.06	0.79	1.39	0.15
S13 – March 2023	1.22	0.75	2.23	0.38	0.64	0.40	1.17	0.20	0.58	0.36	1.05	0.18
S14 – April 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S15 – May 2023	0.03	0.01	0.12	0.03	0.00	0.00	0.00	0.00	0.03	0.01	0.12	0.03
S16 – June 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S17 – July 2023	0.09	0.02	0.37	0.13	0.02	0.01	0.09	0.03	0.07	0.02	0.28	0.10
S18 – August 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S19 – September 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S20 – October 2023	0.12	0.06	0.32	0.10	0.03	0.02	0.09	0.03	0.09	0.04	0.23	0.07
S21 – November 2023	0.17	0.11	0.34	0.08	0.01	0.01	0.02	0.00	0.16	0.11	0.32	0.07
S22 – December 2023	0.20	0.12	0.40	0.07	0.00	0.00	0.00	0.00	0.20	0.12	0.40	0.07
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	1.24	0.94	1.77	0.22	0.33	0.25	0.47	0.06	0.91	0.69	1.30	0.16

1.2.3 TURBINE AREA PLUS 4 KM BUFFER

Table 1-5 Kittiwake MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 4 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	41	24	93	18.8	2	1	5	0.9	39	23	88	17.9
S02 – April 2022	51	21	233	77.8	35	15	162	54.1	16	6	71	23.8
S03 – May 2022	67	52	96	10.6	12	9	17	1.9	55	43	79	8.7

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	8	2	85	22.8	5	1	56	14.9	3	1	30	7.9
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S08 – October 2022	478	380	684	76.1	115	92	165	18.3	363	288	519	57.8
S09 – November 2022	279	208	393	46.0	8	6	11	1.3	271	202	381	44.6
S10 – December 2022	52	37	84	12.0	0	0	0	0.0	52	37	84	12.0
S11 – January 2023	1,399	1,176	1,701	135.7	165	138	200	16.0	1,234	1,038	1,501	119.7
S12 – February 2023	921	743	1,146	101.7	297	240	369	32.8	624	504	776	68.9
S13 – March 2023	631	418	1,096	165.0	333	220	578	87.0	298	197	518	78.0
S14 – April 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S15 – May 2023	22	10	74	17.2	0	0	0	0.0	22	10	74	17.2
S16 – June 2023	2	1	10	2.6	1	0	4	1.1	1	0	6	1.5
S17 – July 2023	38	17	141	43.3	9	4	34	10.3	29	13	108	33.0
S18 – August 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S19 – September 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S20 – October 2023	61	35	140	36.1	17	10	40	10.3	43	25	100	25.8
S21 – November 2023	62	41	129	37.9	4	3	8	2.4	58	39	121	35.5
S22 – December 2023	73	46	142	24.1	0	0	0	0.0	73	46	142	24.1
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	656	532	869	93.0	175	142	233	24.9	480	389	637	68.1

Table 1-6 Kittiwake MRSea unapportioned and uncorrected density estimates (Turbine Area plus 4 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	0.10	0.06	0.23	0.05	0.01	0.00	0.01	0.00	0.10	0.06	0.22	0.04
S02 – April 2022	0.12	0.05	0.57	0.19	0.09	0.04	0.40	0.13	0.04	0.02	0.17	0.06
S03 – May 2022	0.16	0.13	0.23	0.03	0.03	0.02	0.04	0.00	0.13	0.10	0.19	0.02
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	0.02	0.00	0.21	0.06	0.01	0.00	0.14	0.04	0.01	0.00	0.07	0.02
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S08 – October 2022	1.17	0.93	1.67	0.19	0.28	0.22	0.40	0.04	0.89	0.70	1.27	0.14
S09 – November 2022	0.68	0.51	0.96	0.11	0.02	0.01	0.03	0.00	0.66	0.49	0.93	0.11
S10 – December 2022	0.13	0.09	0.20	0.03	0.00	0.00	0.00	0.00	0.13	0.09	0.20	0.03
S11 – January 2023	3.42	2.87	4.16	0.33	0.40	0.34	0.49	0.04	3.02	2.54	3.67	0.29
S12 – February 2023	2.25	1.82	2.80	0.25	0.73	0.59	0.90	0.08	1.52	1.23	1.90	0.17
S13 – March 2023	1.54	1.02	2.68	0.40	0.81	0.54	1.41	0.21	0.73	0.48	1.27	0.19
S14 – April 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S15 – May 2023	0.05	0.02	0.18	0.04	0.00	0.00	0.00	0.00	0.05	0.02	0.18	0.04
S16 – June 2023	0.00	0.00	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00
S17 – July 2023	0.09	0.04	0.35	0.11	0.02	0.01	0.08	0.03	0.07	0.03	0.26	0.08
S18 – August 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S19 – September 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S20 – October 2023	0.15	0.09	0.34	0.09	0.04	0.02	0.10	0.03	0.11	0.06	0.25	0.06
S21 – November 2023	0.15	0.10	0.32	0.09	0.01	0.01	0.02	0.01	0.14	0.09	0.30	0.09
S22 – December 2023	0.18	0.11	0.35	0.06	0.00	0.00	0.00	0.00	0.18	0.11	0.35	0.06
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	1.60	1.30	2.12	0.23	0.43	0.35	0.57	0.06	1.17	0.95	1.56	0.17

1.3 GANNET

1.3.1 TURBINE AREA

Table 1-7 Gannet MRSea unapportioned and uncorrected abundance estimates (Turbine Area)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	5	2	31	11.2	1	1	8	3	4	2	23	8.3
S02 – April 2022	122	86	174	22.6	70	49	100	13.0	52	36	74	9.7
S03 – May 2022	20	6	114	28.2	3	1	19	4.7	16	5	95	23.5
S04 – June 2022	56	36	92	14.4	11	7	17	2.7	46	29	75	11.7
S05 – July 2022	132	90	212	30.8	44	30	70	10.2	88	60	142	20.6
S06 – August 2022	409	206	1,150	264.8	5	3	14	3.3	404	203	1,136	261.5
S07 – September 2022	52	25	110	22.3	10	5	22	4.5	41	20	88	17.8
S08 – October 2022	229	155	382	55.3	61	41	101	14.7	168	114	280	40.6
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	23	15	40	6.9	0	0	0	0.0	23	15	40	6.9
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	5	1	26	8.0	2	1	12	3.6	3	1	14	4.4
S14 – April 2023	35	25	56	7.7	9	6	15	2.0	26	18	41	5.7
S15 – May 2023	39	24	66	11.4	11	7	18	3.2	28	18	48	8.3
S16 – June 2023	101	67	157	23.1	14	9	21	3.1	87	58	136	20.0
S17 – July 2023	97	67	153	23.8	19	13	29	4.5	79	54	123	19.2
S18 – August 2023	20	7	72	18.8	6	2	22	5.7	14	5	50	13.0
S19 – September 2023	51	31	125	25.7	6	4	15	3.2	45	27	109	22.5
S20 – October 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1-8 Gannet MRSea unapportioned and uncorrected density estimates (Turbine Area)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	0.04	0.02	0.22	0.08	0.01	0.00	0.06	0.02	0.03	0.01	0.16	0.06
S02 – April 2022	0.87	0.61	1.24	0.16	0.50	0.35	0.71	0.09	0.37	0.26	0.53	0.07
S03 – May 2022	0.14	0.04	0.81	0.20	0.02	0.01	0.13	0.03	0.12	0.03	0.67	0.17
S04 – June 2022	0.40	0.26	0.66	0.10	0.08	0.05	0.12	0.02	0.32	0.21	0.53	0.08
S05 – July 2022	0.94	0.64	1.51	0.22	0.31	0.21	0.50	0.07	0.63	0.43	1.01	0.15
S06 – August 2022	2.92	1.47	8.20	1.89	0.04	0.02	0.10	0.02	2.88	1.45	8.10	1.86
S07 – September 2022	0.37	0.18	0.79	0.16	0.07	0.04	0.16	0.03	0.30	0.14	0.63	0.13
S08 – October 2022	1.63	1.11	2.72	0.39	0.43	0.29	0.72	0.10	1.20	0.81	2.00	0.29
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	0.16	0.11	0.29	0.05	0.00	0.00	0.00	0.00	0.16	0.11	0.29	0.05
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	0.03	0.01	0.19	0.06	0.01	0.00	0.08	0.03	0.02	0.01	0.10	0.03
S14 – April 2023	0.25	0.18	0.40	0.05	0.07	0.05	0.11	0.01	0.19	0.13	0.30	0.04
S15 – May 2023	0.28	0.17	0.47	0.08	0.08	0.05	0.13	0.02	0.20	0.13	0.34	0.06
S16 – June 2023	0.72	0.48	1.12	0.16	0.10	0.06	0.15	0.02	0.62	0.41	0.97	0.14
S17 – July 2023	0.69	0.48	1.09	0.17	0.13	0.09	0.21	0.03	0.56	0.39	0.88	0.14

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S18 – August 2023	0.14	0.05	0.51	0.13	0.04	0.01	0.16	0.04	0.10	0.03	0.36	0.09
S19 – September 2023	0.37	0.22	0.89	0.18	0.05	0.03	0.11	0.02	0.32	0.19	0.78	0.16
S20 – October 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.3.2 TURBINE AREA PLUS 2 KM BUFFER

Table 1-9 Gannet MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 2 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	17	9	68	40.1	5	2	18	11	13	7	50	29.6
S02 – April 2022	285	213	386	43.8	164	122	221	25.1	122	91	165	18.7
S03 – May 2022	32	13	159	39.9	5	2	26	6.7	27	10	132	33.3
S04 – June 2022	116	80	190	27.2	22	15	36	5.1	94	65	154	22.1
S05 – July 2022	261	183	398	55.8	86	61	132	18.5	174	123	266	37.3
S06 – August 2022	682	390	1,915	394.3	9	5	24	5.0	674	385	1,891	389.4
S07 – September 2022	116	67	214	39.0	23	13	43	7.8	93	53	171	31.2
S08 – October 2022	316	220	522	72.2	84	58	138	19.1	232	162	383	53.0
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	49	33	87	14.4	0	0	0	0.0	49	33	87	14.4
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S13 – March 2023	20	8	73	18.9	9	4	33	8.5	11	4	40	10.4
S14 – April 2023	67	47	104	14.0	18	12	27	3.7	49	35	76	10.3
S15 – May 2023	76	49	124	20.8	21	14	34	5.7	55	36	90	15.1
S16 – June 2023	180	124	278	39.2	24	17	38	5.3	156	107	241	33.9
S17 – July 2023	180	128	284	41.2	34	24	54	7.9	146	103	229	33.3
S18 – August 2023	60	26	170	40.8	18	8	52	12.4	42	18	119	28.4
S19 – September 2023	155	102	321	57.9	19	13	40	7.2	135	90	281	50.7
S20 – October 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1-10 Gannet MRSea unapportioned and uncorrected density estimates (Turbine Area plus 2 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	0.07	0.03	0.26	0.15	0.02	0.01	0.07	0.04	0.05	0.03	0.19	0.11
S02 – April 2022	1.09	0.81	1.47	0.17	0.62	0.47	0.84	0.10	0.46	0.35	0.63	0.07
S03 – May 2022	0.12	0.05	0.60	0.15	0.02	0.01	0.10	0.03	0.10	0.04	0.50	0.13
S04 – June 2022	0.44	0.30	0.72	0.10	0.08	0.06	0.14	0.02	0.36	0.25	0.59	0.08
S05 – July 2022	0.99	0.70	1.52	0.21	0.33	0.23	0.50	0.07	0.66	0.47	1.02	0.14
S06 – August 2022	2.60	1.49	7.30	1.50	0.03	0.02	0.09	0.02	2.57	1.47	7.21	1.48
S07 – September 2022	0.44	0.25	0.82	0.15	0.09	0.05	0.16	0.03	0.36	0.20	0.65	0.12
S08 – October 2022	1.20	0.84	1.99	0.27	0.32	0.22	0.53	0.07	0.88	0.62	1.46	0.20
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	0.19	0.12	0.33	0.05	0.00	0.00	0.00	0.00	0.19	0.12	0.33	0.05
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	0.07	0.03	0.28	0.07	0.03	0.01	0.13	0.03	0.04	0.02	0.15	0.04
S14 – April 2023	0.25	0.18	0.39	0.05	0.07	0.05	0.10	0.01	0.19	0.13	0.29	0.04
S15 – May 2023	0.29	0.19	0.47	0.08	0.08	0.05	0.13	0.02	0.21	0.14	0.34	0.06
S16 – June 2023	0.69	0.47	1.06	0.15	0.09	0.06	0.14	0.02	0.59	0.41	0.92	0.13
S17 – July 2023	0.69	0.49	1.08	0.16	0.13	0.09	0.21	0.03	0.56	0.39	0.87	0.13
S18 – August 2023	0.23	0.10	0.65	0.16	0.07	0.03	0.20	0.05	0.16	0.07	0.45	0.11
S19 – September 2023	0.59	0.39	1.22	0.22	0.07	0.05	0.15	0.03	0.52	0.34	1.07	0.19
S20 – October 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.3.3 TURBINE AREA PLUS 4 KM BUFFER

Table 1-11 Gannet MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 4 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	32	19	109	60.7	8	5	29	16	23	14	80	44.7
S02 – April 2022	513	404	666	66.5	294	232	382	38.2	219	172	284	28.4
S03 – May 2022	45	21	194	48.8	8	3	32	8.1	38	17	162	40.7
S04 – June 2022	198	146	316	43.0	37	28	60	8.1	160	118	256	34.9
S05 – July 2022	426	314	628	82.1	141	104	208	27.2	285	210	420	54.9
S06 – August 2022	872	542	2,225	492.5	11	7	28	6.2	861	536	2,197	486.3
S07 – September 2022	222	143	362	56.6	44	29	72	11.3	177	115	290	45.3
S08 – October 2022	360	262	588	81.3	95	70	156	21.6	264	193	432	59.7
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	82	55	147	24.7	0	0	0	0.0	82	55	147	24.7
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	56	29	145	31.2	25	13	65	14.0	31	16	80	17.2
S14 – April 2023	107	77	162	21.8	28	20	43	5.7	79	57	119	16.1
S15 – May 2023	117	80	188	29.2	32	22	52	8.0	85	58	136	21.1
S16 – June 2023	275	196	420	57.3	37	26	57	7.7	238	169	364	49.5
S17 – July 2023	273	198	424	57.6	52	38	81	11.0	221	160	343	46.6
S18 – August 2023	137	75	334	68.2	42	23	102	20.8	95	52	233	47.5
S19 – September 2023	355	256	674	101.9	44	32	84	12.6	311	224	590	89.2
S20 – October 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1-12 Gannet MRSea unapportioned and uncorrected density estimates (Turbine Area plus 4 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	0.08	0.05	0.27	0.15	0.02	0.01	0.07	0.04	0.06	0.03	0.20	0.11
S02 – April 2022	1.25	0.99	1.63	0.16	0.72	0.57	0.93	0.09	0.53	0.42	0.69	0.07
S03 – May 2022	0.11	0.05	0.47	0.12	0.02	0.01	0.08	0.02	0.09	0.04	0.39	0.10
S04 – June 2022	0.48	0.36	0.77	0.11	0.09	0.07	0.15	0.02	0.39	0.29	0.63	0.09
S05 – July 2022	1.04	0.77	1.53	0.20	0.34	0.25	0.51	0.07	0.70	0.51	1.03	0.13
S06 – August 2022	2.13	1.33	5.44	1.20	0.03	0.02	0.07	0.02	2.10	1.31	5.37	1.19
S07 – September 2022	0.54	0.35	0.89	0.14	0.11	0.07	0.18	0.03	0.43	0.28	0.71	0.11
S08 – October 2022	0.88	0.64	1.44	0.20	0.23	0.17	0.38	0.05	0.65	0.47	1.05	0.15
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	0.20	0.13	0.36	0.06	0.00	0.00	0.00	0.00	0.20	0.13	0.36	0.06
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	0.14	0.07	0.35	0.08	0.06	0.03	0.16	0.03	0.08	0.04	0.19	0.04
S14 – April 2023	0.26	0.19	0.40	0.05	0.07	0.05	0.10	0.01	0.19	0.14	0.29	0.04
S15 – May 2023	0.29	0.20	0.46	0.07	0.08	0.05	0.13	0.02	0.21	0.14	0.33	0.05
S16 – June 2023	0.67	0.48	1.03	0.14	0.09	0.06	0.14	0.02	0.58	0.41	0.89	0.12
S17 – July 2023	0.67	0.48	1.04	0.14	0.13	0.09	0.20	0.03	0.54	0.39	0.84	0.11
S18 – August 2023	0.33	0.18	0.82	0.17	0.10	0.06	0.25	0.05	0.23	0.13	0.57	0.12
S19 – September 2023	0.87	0.62	1.65	0.25	0.11	0.08	0.20	0.03	0.76	0.55	1.44	0.22
S20 – October 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.4 GUILLEMOT

1.4.1 TURBINE AREA

Table 1-13 Guillemot MRSea unapportioned and uncorrected abundance estimates (Turbine Area)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	313	245	428	46.6	287	225	393	42.8	26	20	35	3.8
S02 – April 2022	88	47	159	32.3	81	44	147	29.8	7	4	12	2.5
S03 – May 2022	120	89	177	22.4	116	86	171	21.6	4	3	6	0.7
S04 – June 2022	7	2	130	6,225.9	6	1	110	5,272.4	1	0	20	953.5
S05 – July 2022	113	79	170	22.7	96	67	144	19.2	17	12	26	3.4
S06 – August 2022	21	11	60	12.5	20	10	56	11.6	1	1	4	0.9
S07 – September 2022	1,182	939	1,578	158.0	1,170	930	1,562	156.5	12	9	16	1.6
S08 – October 2022	123	91	171	20.4	100	74	138	16.5	23	17	33	3.9
S09 – November 2022	22	13	46	9.2	16	9	32	6.5	7	4	13	2.7
S10 – December 2022	15	7	38	10.0	15	7	37	9.7	0	0	1	0.3
S11 – January 2023	91	62	143	21.4	87	59	136	20.4	4	3	6	1.0
S12 – February 2023	65	44	96	13.3	64	43	95	13.1	1	1	1	0.2
S13 – March 2023	182	133	251	31.8	180	132	249	31.6	1	1	2	0.2
S14 – April 2023	122	80	179	25.4	103	67	151	21.5	19	12	28	3.9
S15 – May 2023	39	23	73	12.8	25	15	47	8.2	14	8	26	4.6
S16 – June 2023	44	14	152	36.5	40	13	139	33.4	4	1	13	3.1
S17 – July 2023	59	32	111	19.8	28	15	52	9.3	32	17	59	10.5
S18 – August 2023	224	170	299	35.5	224	170	299	35.5	0	0	0	0.0
S19 – September 2023	428	338	539	50.8	426	337	537	50.6	1	1	2	0.2
S20 – October 2023	19	11	34	5.9	17	10	32	5.5	1	1	2	0.4

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S21 – November 2023	7	3	20	4.7	6	2	17	4.0	1	0	3	0.7
S22 – December 2023	17	8	40	7.8	14	7	34	6.8	2	1	5	1.0
S23 – January 2024	90	60	131	18.2	89	60	130	18.0	1	1	1	0.2
S24 – February 2024	95	62	146	23.0	94	62	145	22.7	1	1	1	0.2

Table 1-14 Guillemot MRSea unapportioned and uncorrected density estimates (Turbine Area)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	2.23	1.75	3.05	0.33	2.05	1.61	2.80	0.31	0.18	0.14	0.25	0.03
S02 – April 2022	0.63	0.34	1.14	0.23	0.58	0.31	1.05	0.21	0.05	0.03	0.09	0.02
S03 – May 2022	0.86	0.63	1.26	0.16	0.83	0.61	1.22	0.15	0.03	0.02	0.04	0.01
S04 – June 2022	0.05	0.01	0.93	44.40	0.04	0.01	0.79	37.60	0.01	0.00	0.14	6.80
S05 – July 2022	0.81	0.57	1.21	0.16	0.68	0.48	1.03	0.14	0.12	0.09	0.18	0.02
S06 – August 2022	0.15	0.08	0.43	0.09	0.14	0.07	0.40	0.08	0.01	0.01	0.03	0.01
S07 – September 2022	8.43	6.70	11.25	1.13	8.34	6.63	11.14	1.12	0.08	0.07	0.11	0.01
S08 – October 2022	0.88	0.65	1.22	0.15	0.71	0.52	0.98	0.12	0.17	0.12	0.23	0.03
S09 – November 2022	0.16	0.09	0.33	0.07	0.11	0.07	0.23	0.05	0.05	0.03	0.10	0.02
S10 – December 2022	0.11	0.05	0.27	0.07	0.11	0.05	0.27	0.07	0.00	0.00	0.01	0.00
S11 – January 2023	0.65	0.44	1.02	0.15	0.62	0.42	0.97	0.15	0.03	0.02	0.05	0.01
S12 – February 2023	0.46	0.31	0.69	0.09	0.46	0.31	0.68	0.09	0.01	0.00	0.01	0.00
S13 – March 2023	1.30	0.95	1.79	0.23	1.29	0.94	1.77	0.23	0.01	0.01	0.01	0.00
S14 – April 2023	0.87	0.57	1.28	0.18	0.73	0.48	1.08	0.15	0.13	0.09	0.20	0.03
S15 – May 2023	0.28	0.17	0.52	0.09	0.18	0.11	0.33	0.06	0.10	0.06	0.19	0.03
S16 – June 2023	0.32	0.10	1.08	0.26	0.29	0.09	0.99	0.24	0.03	0.01	0.09	0.02
S17 – July 2023	0.42	0.23	0.79	0.14	0.20	0.11	0.37	0.07	0.22	0.12	0.42	0.08

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S18 – August 2023	1.60	1.21	2.13	0.25	1.60	1.21	2.13	0.25	0.00	0.00	0.00	0.00
S19 – September 2023	3.05	2.41	3.84	0.36	3.04	2.40	3.83	0.36	0.01	0.01	0.01	0.00
S20 – October 2023	0.13	0.08	0.24	0.04	0.12	0.07	0.23	0.04	0.01	0.01	0.02	0.00
S21 – November 2023	0.05	0.02	0.14	0.03	0.04	0.02	0.12	0.03	0.01	0.00	0.02	0.00
S22 – December 2023	0.12	0.06	0.28	0.06	0.10	0.05	0.25	0.05	0.02	0.01	0.04	0.01
S23 – January 2024	0.64	0.43	0.93	0.13	0.63	0.43	0.93	0.13	0.01	0.00	0.01	0.00
S24 – February 2024	0.68	0.44	1.04	0.16	0.67	0.44	1.03	0.16	0.01	0.00	0.01	0.00

1.4.2 TURBINE AREA PLUS 2 KM BUFFER

Table 1-15 Guillemot MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 2 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	635	511	838	82.9	583	469	769	76.1	52	42	69	6.8
S02 – April 2022	160	92	281	53.1	148	85	259	49.0	12	7	22	4.1
S03 – May 2022	245	191	351	41.9	236	185	339	40.5	8	6	12	1.4
S04 – June 2022	11	3	254	12,816.5	10	2	215	10,853.6	2	0	39	1,962.9
S05 – July 2022	215	156	319	41.4	182	132	271	35.1	33	24	48	6.3
S06 – August 2022	52	31	114	21.4	48	29	106	19.9	4	2	8	1.5
S07 – September 2022	1,994	1,658	2,504	221.4	1,974	1,642	2,479	219.2	20	16	25	2.2
S08 – October 2022	228	175	308	34.2	185	142	249	27.7	44	33	59	6.5
S09 – November 2022	50	33	100	23.3	35	23	70	16.4	15	10	29	6.8
S10 – December 2022	38	21	85	18.1	37	20	83	17.6	1	1	2	0.5
S11 – January 2023	191	143	286	37.4	182	137	273	35.7	9	6	13	1.7
S12 – February 2023	152	113	210	25.5	150	111	207	25.2	2	2	3	0.4

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S13 – March 2023	408	316	547	60.6	405	314	543	60.2	3	2	4	0.4
S14 – April 2023	241	168	344	43.9	204	142	291	37.1	37	26	54	6.8
S15 – May 2023	79	48	146	24.8	51	31	94	15.9	28	17	52	8.9
S16 – June 2023	90	36	266	61.1	82	33	243	55.8	8	3	23	5.3
S17 – July 2023	126	74	222	37.3	59	35	104	17.5	67	40	118	19.8
S18 – August 2023	441	344	585	65.3	441	344	585	65.3	0	0	0	0.0
S19 – September 2023	957	788	1,162	94.5	954	785	1,159	94.2	3	2	4	0.3
S20 – October 2023	32	19	59	10.5	30	18	55	9.8	2	1	4	0.7
S21 – November 2023	19	9	46	9.8	16	8	39	8.4	3	1	7	1.5
S22 – December 2023	42	25	84	14.8	37	22	73	12.8	6	3	11	2.0
S23 – January 2024	205	152	286	33.5	203	151	283	33.2	2	1	3	0.3
S24 – February 2024	179	127	261	36.5	178	126	258	36.2	2	1	2	0.3

Table 1-16 Guillemot MRSea unapportioned and uncorrected density estimates (Turbine Area plus 2 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	2.42	1.95	3.19	0.32	2.22	1.79	2.93	0.29	0.20	0.16	0.26	0.03
S02 – April 2022	0.61	0.35	1.07	0.20	0.56	0.32	0.99	0.19	0.05	0.03	0.08	0.02
S03 – May 2022	0.93	0.73	1.34	0.16	0.90	0.70	1.29	0.15	0.03	0.02	0.04	0.01
S04 – June 2022	0.04	0.01	0.97	48.84	0.04	0.01	0.82	41.36	0.01	0.00	0.15	7.48
S05 – July 2022	0.82	0.59	1.22	0.16	0.69	0.50	1.03	0.13	0.12	0.09	0.18	0.02
S06 – August 2022	0.20	0.12	0.44	0.08	0.18	0.11	0.41	0.08	0.01	0.01	0.03	0.01
S07 – September 2022	7.60	6.32	9.54	0.84	7.52	6.26	9.45	0.84	0.08	0.06	0.09	0.01
S08 – October 2022	0.87	0.67	1.17	0.13	0.70	0.54	0.95	0.11	0.17	0.13	0.22	0.02
S09 – November 2022	0.19	0.12	0.38	0.09	0.14	0.09	0.27	0.06	0.06	0.04	0.11	0.03

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S10 – December 2022	0.14	0.08	0.32	0.07	0.14	0.08	0.31	0.07	0.00	0.00	0.01	0.00
S11 – January 2023	0.73	0.54	1.09	0.14	0.70	0.52	1.04	0.14	0.03	0.02	0.05	0.01
S12 – February 2023	0.58	0.43	0.80	0.10	0.57	0.42	0.79	0.10	0.01	0.01	0.01	0.00
S13 – March 2023	1.56	1.20	2.08	0.23	1.54	1.19	2.07	0.23	0.01	0.01	0.02	0.00
S14 – April 2023	0.92	0.64	1.31	0.17	0.78	0.54	1.11	0.14	0.14	0.10	0.20	0.03
S15 – May 2023	0.30	0.18	0.56	0.09	0.19	0.12	0.36	0.06	0.11	0.07	0.20	0.03
S16 – June 2023	0.34	0.14	1.01	0.23	0.31	0.12	0.93	0.21	0.03	0.01	0.09	0.02
S17 – July 2023	0.48	0.28	0.85	0.14	0.23	0.13	0.40	0.07	0.26	0.15	0.45	0.08
S18 – August 2023	1.68	1.31	2.23	0.25	1.68	1.31	2.23	0.25	0.00	0.00	0.00	0.00
S19 – September 2023	3.65	3.00	4.43	0.36	3.64	2.99	4.42	0.36	0.01	0.01	0.01	0.00
S20 – October 2023	0.12	0.07	0.22	0.04	0.11	0.07	0.21	0.04	0.01	0.01	0.02	0.00
S21 – November 2023	0.07	0.04	0.18	0.04	0.06	0.03	0.15	0.03	0.01	0.01	0.03	0.01
S22 – December 2023	0.16	0.10	0.32	0.06	0.14	0.08	0.28	0.05	0.02	0.01	0.04	0.01
S23 – January 2024	0.78	0.58	1.09	0.13	0.77	0.58	1.08	0.13	0.01	0.01	0.01	0.00
S24 – February 2024	0.68	0.48	0.99	0.14	0.68	0.48	0.98	0.14	0.01	0.00	0.01	0.00

1.4.3 TURBINE AREA PLUS 4 KM BUFFER

Table 1-17 Guillemot MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 4 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	1,058	876	1,372	123.0	971	805	1,260	112.9	87	72	112	10.1
S02 – April 2022	268	164	449	75.8	247	152	414	69.9	21	13	35	5.9
S03 – May 2022	424	340	632	1,280.3	410	329	611	1,237.8	14	11	21	42.4
S04 – June 2022	18	6	440	15,376.0	15	5	372	13,021.2	3	1	67	2,354.9
S05 – July 2022	348	258	513	65.4	296	219	435	55.5	53	39	78	9.9
S06 – August 2022	94	64	180	31.6	88	59	168	29.4	6	4	12	2.2
S07 – September 2022	2,805	2,379	3,463	268.3	2,777	2,355	3,428	265.7	28	24	34	2.7
S08 – October 2022	346	271	459	48.9	280	220	372	39.6	66	52	88	9.3
S09 – November 2022	84	57	158	66.2	59	40	112	46.7	25	17	46	19.5
S10 – December 2022	76	49	143	27.3	74	47	139	26.5	2	1	4	0.8
S11 – January 2023	325	257	466	53.4	310	245	445	51.0	15	12	21	2.4
S12 – February 2023	296	231	388	40.7	292	228	383	40.1	4	3	6	0.6
S13 – March 2023	755	606	958	92.0	750	602	951	91.3	6	4	7	0.7
S14 – April 2023	413	309	566	63.7	349	261	478	53.8	64	48	88	9.9
S15 – May 2023	139	90	246	40.3	89	58	158	25.9	50	32	88	14.4
S16 – June 2023	166	81	403	89.9	152	74	368	82.2	14	7	35	7.8
S17 – July 2023	223	143	370	57.9	104	67	173	27.1	119	76	197	30.8
S18 – August 2023	752	604	985	101.3	752	604	985	101.3	0	0	0	0.0
S19 – September 2023	1,729	1,461	2,056	147.7	1,724	1,456	2,050	147.2	5	5	6	0.5
S20 – October 2023	50	30	91	16.3	46	28	85	15.2	3	2	6	1.1
S21 – November 2023	47	29	97	16.8	40	25	83	14.3	7	4	14	2.5
S22 – December 2023	85	58	147	23.4	74	51	127	20.3	11	8	20	3.1
S23 – January 2024	370	291	489	50.5	366	288	485	50.0	3	3	4	0.5

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S24 – February 2024	289	220	403	48.9	286	218	399	48.4	3	2	4	0.5

Table 1-18 Guillemot MRSea unapportioned and uncorrected density estimates (Turbine Area plus 4 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	2.59	2.14	3.35	0.30	2.37	1.97	3.08	0.28	0.21	0.18	0.27	0.02
S02 – April 2022	0.66	0.40	1.10	0.19	0.60	0.37	1.01	0.17	0.05	0.03	0.09	0.01
S03 – May 2022	1.04	0.83	1.54	3.13	1.00	0.80	1.49	3.02	0.03	0.03	0.05	0.10
S04 – June 2022	0.04	0.01	1.07	37.58	0.04	0.01	0.91	31.82	0.01	0.00	0.16	5.75
S05 – July 2022	0.85	0.63	1.25	0.16	0.72	0.53	1.06	0.14	0.13	0.10	0.19	0.02
S06 – August 2022	0.23	0.16	0.44	0.08	0.21	0.14	0.41	0.07	0.02	0.01	0.03	0.01
S07 – September 2022	6.86	5.81	8.46	0.66	6.79	5.76	8.38	0.65	0.07	0.06	0.08	0.01
S08 – October 2022	0.85	0.66	1.12	0.12	0.68	0.54	0.91	0.10	0.16	0.13	0.21	0.02
S09 – November 2022	0.20	0.14	0.39	0.16	0.14	0.10	0.27	0.11	0.06	0.04	0.11	0.05
S10 – December 2022	0.19	0.12	0.35	0.07	0.18	0.12	0.34	0.06	0.01	0.00	0.01	0.00
S11 – January 2023	0.79	0.63	1.14	0.13	0.76	0.60	1.09	0.12	0.04	0.03	0.05	0.01
S12 – February 2023	0.72	0.57	0.95	0.10	0.71	0.56	0.94	0.10	0.01	0.01	0.01	0.00
S13 – March 2023	1.85	1.48	2.34	0.22	1.83	1.47	2.32	0.22	0.01	0.01	0.02	0.00
S14 – April 2023	1.01	0.76	1.38	0.16	0.85	0.64	1.17	0.13	0.16	0.12	0.21	0.02
S15 – May 2023	0.34	0.22	0.60	0.10	0.22	0.14	0.39	0.06	0.12	0.08	0.22	0.04
S16 – June 2023	0.41	0.20	0.98	0.22	0.37	0.18	0.90	0.20	0.04	0.02	0.08	0.02
S17 – July 2023	0.55	0.35	0.90	0.14	0.26	0.16	0.42	0.07	0.29	0.19	0.48	0.08
S18 – August 2023	1.84	1.48	2.41	0.25	1.84	1.48	2.41	0.25	0.00	0.00	0.00	0.00
S19 – September 2023	4.23	3.57	5.02	0.36	4.21	3.56	5.01	0.36	0.01	0.01	0.02	0.00
S20 – October 2023	0.12	0.07	0.22	0.04	0.11	0.07	0.21	0.04	0.01	0.00	0.02	0.00

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S21 – November 2023	0.11	0.07	0.24	0.04	0.10	0.06	0.20	0.04	0.02	0.01	0.04	0.01
S22 – December 2023	0.21	0.14	0.36	0.06	0.18	0.12	0.31	0.05	0.03	0.02	0.05	0.01
S23 – January 2024	0.90	0.71	1.19	0.12	0.90	0.70	1.18	0.12	0.01	0.01	0.01	0.00
S24 – February 2024	0.71	0.54	0.99	0.12	0.70	0.53	0.98	0.12	0.01	0.01	0.01	0.00

1.5 RAZORBILL

1.5.1 TURBINE AREA

Table 1-19 Razorbill MRSea unapportioned and uncorrected abundance estimates (Turbine Area)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	360	236	657	108.4	351	229	640	105.5	9	6	17	2.9
S02 – April 2022	13	5	55	52.8	13	5	54	51.9	0	0	1	0.8
S03 – May 2022	16	7	44	10.1	16	7	44	10.1	0	0	0	0.0
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	28	17	52	9.3	28	16	51	9.2	0	0	1	0.1
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	186	134	274	35.8	182	132	269	35.1	4	3	5	0.7
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	46	25	94	17.6	41	22	84	15.8	5	3	10	1.8

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S13 – March 2023	13	6	32	6.3	13	6	32	6.3	0	0	0	0.0
S14 – April 2023	10	6	20	3.1	9	6	18	2.9	1	0	1	0.2
S15 – May 2023	1	1	4	1.0	1	1	4	1.0	0	0	0	0.0
S16 – June 2023	12	7	25	4.8	11	6	22	4.3	1	1	2	0.5
S17 – July 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S18 – August 2023	289	179	478	78.2	289	179	478	78.2	0	0	0	0.0
S19 – September 2023	112	81	154	18.3	111	80	152	18.1	1	1	2	0.2
S20 – October 2023	4	1	13	4.3	4	1	13	4.3	0	0	0	0.0
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	41	27	64	9.7	40	26	63	9.5	1	1	1	0.2
S24 – February 2024	123	66	223	40.1	118	63	215	38.6	5	2	8	1.5

Table 1-20 Razorbill MRSea unapportioned and uncorrected density estimates (Turbine Area)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	2.57	1.68	4.69	0.77	2.50	1.64	4.56	0.75	0.07	0.04	0.12	0.02
S02 – April 2022	0.09	0.04	0.39	0.38	0.09	0.03	0.39	0.37	0.00	0.00	0.01	0.01
S03 – May 2022	0.11	0.05	0.31	0.07	0.11	0.05	0.31	0.07	0.00	0.00	0.00	0.00
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	0.20	0.12	0.37	0.07	0.20	0.12	0.36	0.07	0.00	0.00	0.00	0.00
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	1.32	0.96	1.95	0.26	1.30	0.94	1.92	0.25	0.03	0.02	0.04	0.00
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	0.33	0.18	0.67	0.13	0.30	0.16	0.60	0.11	0.03	0.02	0.07	0.01
S13 – March 2023	0.09	0.05	0.23	0.05	0.09	0.05	0.23	0.05	0.00	0.00	0.00	0.00
S14 – April 2023	0.07	0.05	0.14	0.02	0.07	0.04	0.13	0.02	0.01	0.00	0.01	0.00
S15 – May 2023	0.01	0.00	0.03	0.01	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00
S16 – June 2023	0.08	0.05	0.18	0.03	0.08	0.04	0.16	0.03	0.01	0.00	0.02	0.00
S17 – July 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S18 – August 2023	2.06	1.28	3.41	0.56	2.06	1.28	3.41	0.56	0.00	0.00	0.00	0.00
S19 – September 2023	0.80	0.58	1.10	0.13	0.79	0.57	1.09	0.13	0.01	0.01	0.01	0.00
S20 – October 2023	0.03	0.01	0.10	0.03	0.03	0.01	0.10	0.03	0.00	0.00	0.00	0.00
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	0.29	0.19	0.46	0.07	0.29	0.19	0.45	0.07	0.01	0.00	0.01	0.00
S24 – February 2024	0.88	0.47	1.59	0.29	0.84	0.45	1.53	0.28	0.03	0.02	0.06	0.01

1.5.2 TURBINE AREA PLUS 2 KM BUFFER

Table 1-21 Razorbill MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 2 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	462	311	831	131.6	450	303	809	128.1	12	8	22	3.5
S02 – April 2022	51	24	161	942.8	50	23	159	928.2	1	0	2	14.5
S03 – May 2022	29	13	81	17.6	29	13	81	17.6	0	0	0	0.0
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S05 – July 2022	61	38	110	19.1	60	38	109	18.9	1	0	1	0.2
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	343	255	500	59.7	336	251	490	58.5	7	5	10	1.2
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	82	49	169	90.8	74	44	152	81.5	8	5	17	9.3
S13 – March 2023	29	16	65	12.2	29	16	65	12.2	0	0	0	0.0
S14 – April 2023	12	8	22	3.2	11	7	20	3.0	1	1	2	0.2
S15 – May 2023	5	3	13	3.7	5	3	13	3.7	0	0	0	0.0
S16 – June 2023	26	16	52	9.5	23	14	47	8.5	3	2	5	0.9
S17 – July 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S18 – August 2023	562	387	872	125.5	562	387	872	125.5	0	0	0	0.0
S19 – September 2023	244	186	325	35.0	242	184	322	34.6	3	2	3	0.4
S20 – October 2023	16	9	39	8.9	16	9	39	8.9	0	0	0	0.0
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	81	52	126	18.6	79	51	123	18.2	2	1	3	0.4
S24 – February 2024	237	142	407	66.0	228	137	391	63.6	9	5	15	2.5

Table 1-22 Razorbill MRSea unapportioned and uncorrected density estimates (Turbine Area plus 2 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	1.76	1.19	3.17	0.50	1.71	1.15	3.08	0.49	0.05	0.03	0.08	0.01
S02 – April 2022	0.19	0.09	0.61	3.59	0.19	0.09	0.60	3.54	0.00	0.00	0.01	0.06
S03 – May 2022	0.11	0.05	0.31	0.07	0.11	0.05	0.31	0.07	0.00	0.00	0.00	0.00
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	0.23	0.15	0.42	0.07	0.23	0.14	0.42	0.07	0.00	0.00	0.00	0.00
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	1.31	0.97	1.91	0.23	1.28	0.95	1.87	0.22	0.03	0.02	0.04	0.00
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	0.31	0.19	0.65	0.35	0.28	0.17	0.58	0.31	0.03	0.02	0.07	0.04
S13 – March 2023	0.11	0.06	0.25	0.05	0.11	0.06	0.25	0.05	0.00	0.00	0.00	0.00
S14 – April 2023	0.05	0.03	0.08	0.01	0.04	0.03	0.08	0.01	0.00	0.00	0.01	0.00
S15 – May 2023	0.02	0.01	0.05	0.01	0.02	0.01	0.05	0.01	0.00	0.00	0.00	0.00
S16 – June 2023	0.10	0.06	0.20	0.04	0.09	0.05	0.18	0.03	0.01	0.01	0.02	0.00
S17 – July 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S18 – August 2023	2.14	1.47	3.32	0.48	2.14	1.47	3.32	0.48	0.00	0.00	0.00	0.00
S19 – September 2023	0.93	0.71	1.24	0.13	0.92	0.70	1.23	0.13	0.01	0.01	0.01	0.00
S20 – October 2023	0.06	0.04	0.15	0.03	0.06	0.04	0.15	0.03	0.00	0.00	0.00	0.00
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	0.31	0.20	0.48	0.07	0.30	0.20	0.47	0.07	0.01	0.00	0.01	0.00
S24 – February 2024	0.90	0.54	1.55	0.25	0.87	0.52	1.49	0.24	0.03	0.02	0.06	0.01

1.5.3 TURBINE AREA PLUS 4 KM BUFFER

Table 1-23 Razorbill MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 4 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	529	366	930	144.9	515	357	905	141.1	14	10	24	3.8
S02 – April 2022	160	91	377	21,696.9	157	89	372	21,362.2	2	1	6	334.7
S03 – May 2022	45	23	112	23.7	45	23	112	23.7	0	0	0	0.0
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	116	74	203	33.9	115	74	201	33.6	1	1	2	0.3
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	503	389	710	79.0	493	381	696	77.5	10	8	14	1.5
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	129	85	244	11,848.5	116	76	219	10,633.2	13	9	25	1,215.2
S13 – March 2023	52	31	113	36.1	52	31	113	36.1	0	0	0	0.0
S14 – April 2023	36	30	47	4.6	34	28	44	4.3	3	2	3	0.3
S15 – May 2023	12	7	32	9.3	12	7	32	9.3	0	0	0	0.0
S16 – June 2023	48	30	96	17.7	44	27	87	15.9	5	3	10	1.8
S17 – July 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S18 – August 2023	948	711	1,339	166.0	948	711	1,339	166.0	0	0	0	0.0
S19 – September 2023	445	356	579	56.6	440	352	573	56.0	5	4	6	0.6
S20 – October 2023	35	22	72	13.0	35	22	72	13.0	0	0	0	0.0
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	136	93	209	29.7	133	91	205	29.0	3	2	4	0.6

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S24 – February 2024	349	234	573	85.0	336	225	552	81.8	13	9	21	3.2

Table 1-24 Razorbill MRSea unapportioned and uncorrected density estimates (Turbine Area plus 4 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	1.29	0.90	2.27	0.35	1.26	0.87	2.21	0.34	0.03	0.02	0.06	0.01
S02 – April 2022	0.39	0.22	0.92	53.02	0.38	0.22	0.91	52.20	0.01	0.00	0.01	0.82
S03 – May 2022	0.11	0.06	0.27	0.06	0.11	0.06	0.27	0.06	0.00	0.00	0.00	0.00
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	0.28	0.18	0.50	0.08	0.28	0.18	0.49	0.08	0.00	0.00	0.00	0.00
S06 – August 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S07 – September 2022	1.23	0.95	1.74	0.19	1.21	0.93	1.70	0.19	0.02	0.02	0.03	0.00
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	0.32	0.21	0.60	28.95	0.28	0.19	0.54	25.99	0.03	0.02	0.06	2.97
S13 – March 2023	0.13	0.08	0.27	0.09	0.13	0.08	0.27	0.09	0.00	0.00	0.00	0.00
S14 – April 2023	0.09	0.07	0.12	0.01	0.08	0.07	0.11	0.01	0.01	0.01	0.01	0.00
S15 – May 2023	0.03	0.02	0.08	0.02	0.03	0.02	0.08	0.02	0.00	0.00	0.00	0.00
S16 – June 2023	0.12	0.07	0.24	0.04	0.11	0.06	0.21	0.04	0.01	0.01	0.02	0.00
S17 – July 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S18 – August 2023	2.32	1.74	3.27	0.41	2.32	1.74	3.27	0.41	0.00	0.00	0.00	0.00
S19 – September 2023	1.09	0.87	1.42	0.14	1.08	0.86	1.40	0.14	0.01	0.01	0.02	0.00
S20 – October 2023	0.09	0.05	0.17	0.03	0.09	0.05	0.17	0.03	0.00	0.00	0.00	0.00

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S21 – November 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	0.33	0.23	0.51	0.07	0.33	0.22	0.50	0.07	0.01	0.00	0.01	0.00
S24 – February 2024	0.85	0.57	1.40	0.21	0.82	0.55	1.35	0.20	0.03	0.02	0.05	0.01

1.6 PUFFIN

1.6.1 TURBINE AREA

Table 1-25 Puffin MRSea unapportioned and uncorrected abundance estimates (Turbine Area)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S02 – April 2022	17	8	38	9.4	11	5	25	6.1	6	3	13	3.3
S03 – May 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	3,408	2,603	4,507	492.7	2,897	2,213	3,831	418.8	511	390	675	73.8
S06 – August 2022	10	5	23	5.0	10	5	23	5.0	0	0	0	0.0
S07 – September 2022	172	123	249	33.1	172	123	249	33.1	0	0	0	0.0
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	0	0	0	0.1	0	0	0	0.1	0	0	0	0.0
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S14 – April 2023	155	91	275	55.4	49	29	87	17.6	106	62	187	37.8
S15 – May 2023	14	8	27	5.4	10	5	18	3.6	5	3	9	1.8
S16 – June 2023	46	23	111	27.0	43	22	103	25.1	3	2	7	1.8
S17 – July 2023	130	86	200	28.2	52	35	81	11.4	77	51	119	16.8
S18 – August 2023	180	131	260	34.3	180	131	260	34.3	0	0	0	0.0
S19 – September 2023	135	101	195	24.2	135	101	195	24.2	0	0	0	0.0
S20 – October 2023	80	56	117	15.7	80	56	117	15.7	0	0	0	0.0

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S21 – November 2023	11	6	26	5.3	11	6	26	5.3	0	0	0	0.0
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1-26 Puffin MRSea unapportioned and uncorrected density estimates (Turbine Area)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S02 – April 2022	0.12	0.05	0.27	0.07	0.08	0.04	0.18	0.04	0.04	0.02	0.10	0.02
S03 – May 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	24.30	18.57	32.14	3.51	20.66	15.78	27.32	2.99	3.64	2.78	4.82	0.53
S06 – August 2022	0.07	0.04	0.16	0.04	0.07	0.04	0.16	0.04	0.00	0.00	0.00	0.00
S07 – September 2022	1.23	0.88	1.77	0.24	1.23	0.88	1.77	0.24	0.00	0.00	0.00	0.00
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S14 – April 2023	1.10	0.65	1.96	0.40	0.35	0.21	0.62	0.13	0.75	0.44	1.34	0.27
S15 – May 2023	0.10	0.06	0.19	0.04	0.07	0.04	0.13	0.03	0.03	0.02	0.06	0.01
S16 – June 2023	0.33	0.17	0.79	0.19	0.30	0.16	0.74	0.18	0.02	0.01	0.05	0.01
S17 – July 2023	0.92	0.61	1.43	0.20	0.37	0.25	0.58	0.08	0.55	0.36	0.85	0.12

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S18 – August 2023	1.28	0.93	1.86	0.24	1.28	0.93	1.86	0.24	0.00	0.00	0.00	0.00
S19 – September 2023	0.96	0.72	1.39	0.17	0.96	0.72	1.39	0.17	0.00	0.00	0.00	0.00
S20 – October 2023	0.57	0.40	0.84	0.11	0.57	0.40	0.84	0.11	0.00	0.00	0.00	0.00
S21 – November 2023	0.08	0.04	0.19	0.04	0.08	0.04	0.19	0.04	0.00	0.00	0.00	0.00
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.6.2 TURBINE AREA PLUS 2 KM BUFFER

Table 1-27 Puffin MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 2 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S02 – April 2022	47	26	99	20.9	31	17	64	13.6	17	9	35	7.3
S03 – May 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	6,207	4,918	8,116	788.4	5,277	4,181	6,900	670.2	930	737	1,216	118.1
S06 – August 2022	25	15	55	10.1	25	15	55	10.1	0	0	0	0.0
S07 – September 2022	330	246	454	55.8	330	246	454	55.8	0	0	0	0.0
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	1	0	2	0.4	1	0	2	0.4	0	0	0	0.0
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S13 – March 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S14 – April 2023	245	155	430	78.0	78	49	136	24.8	167	106	293	53.2
S15 – May 2023	29	18	51	8.8	19	12	34	5.9	10	6	17	2.9
S16 – June 2023	100	58	221	47.9	93	54	206	44.7	7	4	15	3.2
S17 – July 2023	257	180	382	50.8	104	73	154	20.5	153	107	228	30.3
S18 – August 2023	398	305	541	63.4	398	305	541	63.4	0	0	0	0.0
S19 – September 2023	268	206	381	43.3	268	206	381	43.3	0	0	0	0.0
S20 – October 2023	152	109	223	28.7	152	109	223	28.7	0	0	0	0.0
S21 – November 2023	20	12	46	8.8	20	12	46	8.8	0	0	0	0.0
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1-28 Puffin MRSea unapportioned and uncorrected density estimates (Turbine Area plus 2 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S02 – April 2022	0.18	0.10	0.38	0.08	0.12	0.06	0.24	0.05	0.06	0.03	0.13	0.03
S03 – May 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	23.65	18.74	30.93	3.00	20.11	15.93	26.29	2.55	3.54	2.81	4.63	0.45
S06 – August 2022	0.10	0.06	0.21	0.04	0.10	0.06	0.21	0.04	0.00	0.00	0.00	0.00
S07 – September 2022	1.26	0.94	1.73	0.21	1.26	0.94	1.73	0.21	0.00	0.00	0.00	0.00
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S10 – December 2022	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S14 – April 2023	0.93	0.59	1.64	0.30	0.30	0.19	0.52	0.09	0.64	0.40	1.12	0.20
S15 – May 2023	0.11	0.07	0.19	0.03	0.07	0.05	0.13	0.02	0.04	0.02	0.06	0.01
S16 – June 2023	0.38	0.22	0.84	0.18	0.36	0.21	0.78	0.17	0.03	0.01	0.06	0.01
S17 – July 2023	0.98	0.69	1.46	0.19	0.39	0.28	0.59	0.08	0.58	0.41	0.87	0.12
S18 – August 2023	1.52	1.16	2.06	0.24	1.52	1.16	2.06	0.24	0.00	0.00	0.00	0.00
S19 – September 2023	1.02	0.79	1.45	0.16	1.02	0.79	1.45	0.16	0.00	0.00	0.00	0.00
S20 – October 2023	0.58	0.42	0.85	0.11	0.58	0.42	0.85	0.11	0.00	0.00	0.00	0.00
S21 – November 2023	0.08	0.04	0.18	0.03	0.08	0.04	0.18	0.03	0.00	0.00	0.00	0.00
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.6.3 TURBINE AREA PLUS 4 KM BUFFER

Table 1-29 Puffin MRSea unapportioned and uncorrected abundance estimates (Turbine Area plus 4 km buffer)

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S02 – April 2022	107	70	198	33.6	70	46	129	21.8	38	25	69	11.8
S03 – May 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Survey	Abundances											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S05 – July 2022	8,778	7,136	11,175	999.3	7,463	6,066	9,500	849.5	1,315	1,069	1,674	149.7
S06 – August 2022	53	35	101	15.8	53	35	101	15.8	0	0	0	0.0
S07 – September 2022	513	399	684	75.2	513	399	684	75.2	0	0	0	0.0
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	9	6	16	2.5	9	6	16	2.5	0	0	0	0.0
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S14 – April 2023	322	217	546	92.2	102	69	173	29.3	220	148	373	63.0
S15 – May 2023	49	35	79	12.1	33	23	53	8.0	16	12	26	4.0
S16 – June 2023	178	116	350	68.5	166	108	327	63.8	12	8	24	4.6
S17 – July 2023	428	316	620	76.4	173	128	250	30.8	255	188	370	45.6
S18 – August 2023	744	596	978	96.1	744	596	978	96.1	0	0	0	0.0
S19 – September 2023	414	329	578	60.0	414	329	578	60.0	0	0	0	0.0
S20 – October 2023	235	172	347	42.0	235	172	347	42.0	0	0	0	0.0
S21 – November 2023	34	22	67	11.8	34	22	67	11.8	0	0	0	0.0
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 1-30 Puffin MRSea unapportioned and uncorrected density estimates (Turbine Area plus 4 km buffer)

Survey	Density											
	All behaviours				Sitting				Flying			
	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD	Prediction	LCL	UCL	SD
S01 – March 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S02 – April 2022	0.26	0.17	0.48	0.08	0.17	0.11	0.31	0.05	0.09	0.06	0.17	0.03
S03 – May 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S04 – June 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S05 – July 2022	21.45	17.44	27.31	2.44	18.24	14.82	23.22	2.08	3.21	2.61	4.09	0.37
S06 – August 2022	0.13	0.08	0.25	0.04	0.13	0.08	0.25	0.04	0.00	0.00	0.00	0.00
S07 – September 2022	1.25	0.98	1.67	0.18	1.25	0.98	1.67	0.18	0.00	0.00	0.00	0.00
S08 – October 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S09 – November 2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S10 – December 2022	0.02	0.01	0.04	0.01	0.02	0.01	0.04	0.01	0.00	0.00	0.00	0.00
S11 – January 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S12 – February 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S13 – March 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S14 – April 2023	0.79	0.53	1.33	0.23	0.25	0.17	0.42	0.07	0.54	0.36	0.91	0.15
S15 – May 2023	0.12	0.08	0.19	0.03	0.08	0.06	0.13	0.02	0.04	0.03	0.06	0.01
S16 – June 2023	0.44	0.28	0.86	0.17	0.41	0.26	0.80	0.16	0.03	0.02	0.06	0.01
S17 – July 2023	1.05	0.77	1.52	0.19	0.42	0.31	0.61	0.08	0.62	0.46	0.90	0.11
S18 – August 2023	1.82	1.46	2.39	0.23	1.82	1.46	2.39	0.23	0.00	0.00	0.00	0.00
S19 – September 2023	1.01	0.80	1.41	0.15	1.01	0.80	1.41	0.15	0.00	0.00	0.00	0.00
S20 – October 2023	0.58	0.42	0.85	0.10	0.58	0.42	0.85	0.10	0.00	0.00	0.00	0.00
S21 – November 2023	0.08	0.05	0.16	0.03	0.08	0.05	0.16	0.03	0.00	0.00	0.00	0.00
S22 – December 2023	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S23 – January 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S24 – February 2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1.7 GLOSSARY OF TERMS AND ABBREVIATIONS

A list of key terms and acronyms used in this Appendix are provided in **Table 1-31** and **Table 1-32**.

Table 1-31 Acronyms and abbreviations

Term	Definition
LCL	Lower confidence limit
SD	Standard Deviation
UCL	Upper confidence limit

Table 1-32 Glossary

Term	Meaning
Lower confidence limit	Represents the lower bound of a confidence interval
Standard Deviation	A statistic measuring the dispersion of a dataset relative to its mean. It is calculated as the square root of the variance
Upper confidence limit	Represents the upper bound of a confidence interval

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