BERWICK BANK WIND FARM
OFFSHORE ENVIRONMENTAL IMPACT ASSESSMENT

APPENDIX 11.1, ANNEX J: DESIGN-BASED ANALYSIS – POPULATION ESTIMATES FOR SITTING BIRDS GROUPED BY SPECIES (BERWICK BANK DEVELOPMENT ARRAY ONLY)

NOTE

This annex provides both apportioned and unapportioned density and population estimates for sitting birds of focal species within the Berwick Bank Development array only. Estimates presented for auk species do not account for availability bias. Further EIA/HRA assessments should rely on those that have this correction applied (see Annex K)

TABLES

Table 1: Unapportioned density and population estimates of sitting common scoter in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Common scoter	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Sitting Common scoter	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 2: Apportioned density and population estimates of sitting common scoter in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Common scoter	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0

Table 3: Unapportioned density and population estimates of sitting kittiwake in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Kittiwake	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	11.48	5.8	18.39	11603	5860	18594	3144	27.1%
May-19	1.04	0.44	1.82	1055	441	1839	362	34.24%
Jun-19	1.84	1.16	2.53	1859	1175	2559	343	18.42%
Jul-19	2.84	2.21	3.51	2870	2235	3550	356	12.39%
Aug-19	4.27	3.29	5.57	4319	3329	5636	586	13.56%
Sep-19	1.49	0.99	2.09	1505	999	2116	283	18.77%
Oct-19	0.21	0.13	0.3	212	128	300	44	20.68%
Nov-19	0.05	0.01	0.12	55	14	123	31	56.84%
Dec-19	0.09	0.02	0.2	90	18	207	51	57.17%
Jan-20	1.11	0.32	2.2	1122	322	2224	499	44.46%
Feb-20	1.23	0.57	2.01	1240	578	2033	381	30.72%
Mar-20	2.84	1.95	3.85	2876	1974	3892	489	17%
May S01 20	3.17	1.24	5.37	3209	1257	5432	1044	32.54%
May S02 20	1.67	1	2.66	1692	1012	2694	436	25.72%
Jun-20	0.95	0.65	1.29	962	657	1305	168	17.41%
Jul-20	6.92	5.05	8.77	6995	5110	8868	994	14.21%
Aug-20	8.77	5.9	12.17	8863	5963	12301	1620	18.27%
Sep-20	12.16	7.53	17.27	12290	7609	17462	2571	20.92%
Oct-20	0.2	0.12	0.27	202	126	275	39	19.25%
Nov-20	1.27	0.51	2.24	1287	515	2266	466	36.22%
Dec-20	0.24	0.05	0.57	247	47	577	152	61.31%
Jan-21	1.06	0.34	1.9	1069	346	1919	416	38.93%
Feb-21	2.29	0.26	5.46	2311	261	5517	1413	61.12%
Apr S01 21	2.99	1.99	4.12	3021	2015	4166	564	18.65%
Apr S02 21	13.12	5.63	20.91	13267	5689	21134	3921	29.55%

Table 4: Apportioned density and population estimates of sitting kittiwake in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Kittiwake	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	11.76	6.05	18.32	11883	6111	18519	3181	26.76%
May-19	1.07	0.47	1.81	1085	472	1829	365	33.61%
Jun-19	1.87	1.3	2.57	1896	1310	2595	328	17.28%
Jul-19	2.86	2.22	3.53	2893	2243	3568	337	11.63%
Aug-19	4.26	3.34	5.31	4307	3373	5367	510	11.83%
Sep-19	1.48	0.97	2.16	1498	981	2188	302	20.11%
Oct-19	0.24	0.16	0.33	243	160	330	43	17.59%
Nov-19	0.07	0.01	0.13	67	13	135	30	45.1%
Dec-19	0.09	0.02	0.21	93	17	213	53	57.05%
Jan-20	1.13	0.32	2.2	1144	328	2223	501	43.8%
Feb-20	1.3	0.6	2.17	1319	606	2194	410	31.09%
Mar-20	2.86	1.93	3.95	2891	1951	3990	508	17.54%
May S01 20	3.51	1.4	5.8	3550	1415	5863	1177	33.15%
May S02 20	1.73	0.99	2.67	1754	1005	2699	459	26.15%
Jun-20	1	0.71	1.35	1011	721	1366	163	16.09%
Jul-20	6.98	5.34	9.02	7057	5398	9121	959	13.59%
Aug-20	8.8	5.81	12	8900	5872	12135	1608	18.06%
Sep-20	12.17	7.29	17.12	12304	7367	17307	2616	21.26%
Oct-20	0.2	0.13	0.28	207	136	281	39	18.55%
Nov-20	1.33	0.56	2.33	1350	570	2355	492	36.43%
Dec-20	0.3	0.07	0.63	300	75	636	156	51.85%
Jan-21	1.08	0.34	1.95	1092	341	1976	427	39.07%
Feb-21	2.32	0.27	5.5	2351	276	5558	1425	60.61%
Apr S01 21	2.99	2.07	4.13	3026	2089	4176	536	17.68%
Apr S02 21	13.32	5.49	22.29	13464	5546	22528	4251	31.57%

Table 5: Unapportioned density and population estimates of sitting black-headed gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Black-headed gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0

Table 6: Apportioned density and population estimates of sitting black-headed gulls in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Black-headed gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 6: Apportioned density and population estimates of sitting black-headed gulls in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Black-headed gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	1	0	1	1	92.63%
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 7: Unapportioned density and population estimates of sitting little gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Little gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.01	0	0.02	8	0	22	7	92.11%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0.02	0	0.04	17	0	43	11	65.52%

Table 8: Apportioned density and population estimates of sitting little gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Little gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	1	0	1	1	89.61%
Sep-19	0	0	0	1	0	1	1	88.98%
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.01	0	0.02	8	0	22	8	98.65%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	1	0	1	1	94.61%
Aug-20	0	0	0	1	0	1	1	90.39%
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	1	0	1	1	94.27%
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0.03	0.01	0.06	31	8	60	13	43.11%

Table 9: Unapportioned density and population estimates of sitting common gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Common gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0.01	0	0.02	8	0	22	7	90.24%
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.02	0	0.05	17	0	47	15	89.77%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0.04	0	0.08	40	0	86	21	51.67%
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0.01	0	0.03	9	0	28	9	98.77%
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0.02	0	0.04	17	0	39	11	60.88%
Apr S02 21	0	0	0	0	0	0	0	0

Table 10: Apportioned density and population estimates of sitting common gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Common gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0.01	0	0.02	8	0	22	7	92.8%
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	1	0	1	1	96.76%
Nov-19	0.03	0	0.08	35	0	80	21	59.42%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	1	0	1	1	90.57%
Feb-20	0.04	0.01	0.08	40	8	78	19	47.01%
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	1	0	1	1	89.25%
Aug-20	0	0	0	1	0	1	1	101.42%
Sep-20	0.01	0	0.02	8	0	24	8	95.15%
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	2	0	4	2	93.09%
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0.02	0	0.04	17	0	39	11	65.09%
Apr S02 21	0	0	0	1	1	1	1	48.55%

Table 11: Unapportioned density and population estimates of sitting great black-backed gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Great black-backed gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.06	0	0.18	58	0	184	58	98.99%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0.02	0	0.04	16	0	40	11	67.12%
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 12: Apportioned density and population estimates of sitting great black-backed gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Great black-backed gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	2	1	4	1	46.24%
Jul-19	0	0	0	1	0	2	1	59.19%
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.06	0	0.18	60	0	185	58	96.87%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0.02	0	0.04	19	2	42	11	57.46%
Aug-20	0	0	0	1	0	1	1	93.23%
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	1	0	1	1	98.7%
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 13: Unapportioned density and population estimates of sitting herring gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Herring gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0.83	0.27	1.46	843	270	1472	305	36.15%
Jul-19	0.11	0.05	0.18	114	53	184	34	29.39%
Aug-19	0.01	0	0.02	9	0	24	8	94.77%
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0.01	0	0.03	10	0	29	9	92.25%
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	1.82	0.98	2.82	1843	988	2846	473	25.64%
Aug-20	0.03	0.01	0.06	32	8	64	15	47.55%
Sep-20	0.05	0.02	0.1	56	16	103	22	39.85%
Oct-20	0.01	0	0.02	8	0	24	8	98.31%
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0.02	0	0.07	24	0	69	18	73.25%
Feb-21	0.01	0	0.02	8	0	24	8	94.74%
Apr S01 21	0.01	0	0.02	8	0	24	8	93.51%
Apr S02 21	0	0	0	0	0	0	0	0

Table 14: Apportioned density and population estimates of sitting herring gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Herring gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0.89	0.31	1.53	897	315	1550	324	36.11%
Jul-19	0.15	0.08	0.23	151	83	228	37	24.5%
Aug-19	0.01	0	0.02	9	0	24	8	91.71%
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.05	0	0.14	50	0	142	41	81.78%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0.01	0	0.03	14	1	31	9	62.08%
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	1.94	1.04	2.88	1963	1053	2908	476	24.24%
Aug-20	0.07	0.02	0.11	67	18	114	25	37.7%
Sep-20	0.07	0.02	0.12	67	19	122	28	40.81%
Oct-20	0.01	0	0.02	8	0	24	8	96.04%
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	1	0	1	1	92.77%
Jan-21	0.03	0	0.08	32	1	76	21	65.31%
Feb-21	0.02	0	0.03	17	4	35	9	50.81%
Apr S01 21	0.01	0	0.03	11	0	29	8	74.12%
Apr S02 21	0.01	0	0.02	9	0	18	5	50.72%

Table 15: Unapportioned density and population estimates of sitting lesser black-backed gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Lesser black-backed gull	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0.04	0	0.08	39	0	84	22	55.36%
Jul-19	0.04	0.01	0.06	36	8	65	15	40.52%
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0.29	0.2	0.4	297	202	403	51	17.19%
Aug-20	0.01	0	0.02	8	0	24	8	95.2%
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 16: Apportioned density and population estimates of sitting lesser black-backed gull in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Lesser black-backed gull	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0.04	0.01	0.09	44	8	88	22	49.87%
Jul-19	0.04	0.01	0.07	39	10	68	15	36.98%
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	1	0	1	1	86.25%
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0.31	0.21	0.41	315	212	414	54	16.9%
Aug-20	0.01	0	0.03	12	1	28	8	63.21%
Sep-20	0	0	0	1	0	2	1	98.44%
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 17: Unapportioned density and population estimates of sitting common tern in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Common tern	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 18: Apportioned density and population estimates of sitting common tern in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Common tern	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	1.74	0.64	3.02	1761	643	3053	598	33.92%
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 19: Unapportioned density and population estimates of sitting Arctic tern in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Arctic tern	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0.01	0	0.02	8	0	24	8	93.48%
Jul-20	0.03	0	0.09	31	0	95	32	101.64%
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Sitting Arctic tern	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0.01	0	0.02	8	0	24	8	93.26%
Jul-20	0.03	0	0.09	34	0	95	34	98.4%
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 20: Apportioned density and population estimates of sitting Arctic tern in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Arctic tern	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0.01	0	0.02	8	0	24	8	96.16%
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0

Table 21: Unapportioned density and population estimates of sitting great skua in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Great skua	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0.01	0	0.02	8	0	24	8	93.23%
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0.02	0	0.05	24	0	54	14	55.26%
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 22: Apportioned density and population estimates of sitting great skua in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Great skua	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0.01	0	0.02	9	0	24	8	94.13%
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0.03	0	0.08	32	0	78	20	59.89%
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 23: Unapportioned density and population estimates of sitting little auk in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Little auk	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0.01	0	0.02	7	0	20	7	92.3%
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.02	0	0.03	16	0	32	10	60.17%
Dec-19	0.01	0	0.02	8	0	23	7	92%
Jan-20	0.05	0.01	0.1	49	8	97	23	46.78%
Feb-20	0.01	0	0.02	9	0	24	8	92.58%
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0.02	0	0.06	24	0	64	17	71.13%
Dec-20	0.3	0.13	0.5	300	127	503	94	31.37%
Jan-21	0.02	0	0.07	25	0	72	24	95.86%
Feb-21	0.01	0	0.02	8	0	24	8	88.11%
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 24: Apportioned density and population estimates of sitting little auk in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Little auk	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0.01	0	0.02	9	2	22	7	70.42%
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	3	3	4	1	15.29%
Nov-19	0.02	0	0.05	24	3	50	12	49.91%
Dec-19	0.01	0	0.03	14	3	34	9	60.02%
Jan-20	0.1	0.04	0.18	103	42	179	37	35.16%
Feb-20	0.06	0.03	0.1	65	33	104	19	28.26%
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0.03	0.01	0.07	34	9	74	18	51.89%
Dec-20	0.44	0.24	0.67	444	247	680	116	25.92%
Jan-21	0.13	0.09	0.18	137	96	184	23	16.48%
Feb-21	0.02	0	0.03	16	5	33	8	50.58%
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 25: Unapportioned density and population estimates of sitting guillemot in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Guillemot	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	8.81	5.76	12.58	8906	5824	12716	1742	19.55%
May-19	21.36	16.17	27.4	21592	16346	27695	2937	13.6%
Jun-19	5.15	3.38	7.29	5211	3418	7374	1011	19.39%
Jul-19	22.6	18.48	27.07	22847	18686	27369	2305	10.09%
Aug-19	25.01	15.85	38.56	25286	16018	38978	5939	23.48%
Sep-19	2.98	2.36	3.62	3013	2384	3662	332	11.01%
Oct-19	1.16	0.61	2.01	1172	617	2036	373	31.78%
Nov-19	0.53	0.37	0.69	533	378	695	81	15.11%
Dec-19	1.24	0.8	1.67	1252	807	1691	242	19.27%
Jan-20	8.81	6.05	13.09	8901	6116	13230	1744	19.59%
Feb-20	6.45	4.17	8.62	6525	4216	8716	1167	17.87%
Mar-20	20.73	15.02	26.32	20959	15182	26604	3008	14.35%
May S01 20	15.47	9.21	22.73	15643	9314	22980	3375	21.57%
May S02 20	14.67	9.33	20.71	14825	9435	20933	2869	19.35%
Jun-20	34.82	27.75	42.33	35202	28047	42791	3944	11.2%
Jul-20	8.24	6.52	10.13	8325	6592	10242	974	11.7%
Aug-20	22.52	19.54	25.83	22762	19752	26108	1569	6.89%
Sep-20	25.31	18.66	32.85	25585	18863	33210	3738	14.61%
Oct-20	2.12	1.54	2.66	2141	1553	2688	302	14.1%
Nov-20	1.5	1.06	2.04	1519	1077	2058	264	17.34%
Dec-20	10.45	6.99	15.13	10568	7062	15294	2215	20.96%
Jan-21	7.21	5.81	8.95	7288	5873	9049	769	10.54%
Feb-21	4.41	2.67	6.44	4463	2704	6515	999	22.37%
Apr S01 21	19.37	16.18	22.72	19578	16353	22970	1744	8.91%
Apr S02 21	52.74	38.6	67.09	53308	39018	67817	7313	13.72%

Table 26: Apportioned density and population estimates of sitting guillemot in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Guillemot	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	9.06	6.31	13.03	9158	6380	13171	1741	19.01%
May-19	22.03	17.38	28.19	22270	17572	28496	3003	13.48%
Jun-19	5.39	3.59	7.58	5454	3625	7664	1040	19.06%
Jul-19	24.34	19.99	28.99	24606	20205	29310	2374	9.64%
Aug-19	27.19	16.8	39.56	27484	16980	39989	6141	22.34%
Sep-19	3.81	2.96	4.6	3850	2988	4646	422	10.95%
Oct-19	1.38	0.77	2.27	1396	775	2291	407	29.14%
Nov-19	0.59	0.46	0.74	599	465	752	76	12.63%
Dec-19	1.35	0.92	1.84	1366	927	1858	251	18.31%
Jan-20	9.91	6.72	14.52	10019	6794	14679	2025	20.21%
Feb-20	7.14	4.69	9.64	7216	4744	9750	1331	18.44%
Mar-20	22.55	16.14	28.7	22792	16316	29010	3305	14.5%
May S01 20	16.59	9.63	24.54	16767	9736	24806	3846	22.93%
May S02 20	15.15	10.35	20.64	15317	10461	20866	2813	18.36%
Jun-20	35.16	27.89	42.89	35541	28195	43352	3989	11.22%
Jul-20	8.88	6.93	10.7	8982	7008	10819	1017	11.32%
Aug-20	23.92	20.88	26.74	24179	21111	27033	1526	6.31%
Sep-20	26.96	19.65	34.65	27256	19861	35027	3885	14.25%
Oct-20	2.3	1.74	2.93	2328	1763	2967	309	13.26%
Nov-20	1.6	1.16	2.18	1622	1169	2208	263	16.21%
Dec-20	11.25	7.32	16.69	11377	7395	16873	2521	22.16%
Jan-21	7.98	6.22	9.61	8070	6287	9711	880	10.9%
Feb-21	4.94	3.1	7.02	4991	3133	7094	989	19.8%
Apr S01 21	20.37	16.9	23.68	20591	17082	23941	1749	8.49%
Apr S02 21	53.73	38.43	69.05	54317	38843	69804	7739	14.25%

Table 27: Unapportioned density and population estimates of sitting razorbill in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Razorbill	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	1.02	0.5	1.68	1033	502	1702	307	29.71%
May-19	1.06	0.76	1.4	1075	771	1416	165	15.35%
Jun-19	0.17	0.04	0.37	169	39	374	91	53.8%
Jul-19	1.9	1.17	2.7	1923	1184	2729	408	21.22%
Aug-19	1.35	0.77	1.98	1364	781	2006	307	22.51%
Sep-19	1.01	0.63	1.45	1026	642	1465	216	21%
Oct-19	0.45	0.2	0.71	456	204	718	131	28.6%
Nov-19	0.07	0.03	0.12	69	30	121	24	35.02%
Dec-19	0.25	0.1	0.41	248	97	411	84	33.84%
Jan-20	0.99	0.52	1.59	1004	525	1606	274	27.28%
Feb-20	0.91	0.58	1.32	918	588	1335	197	21.47%
Mar-20	4.35	2.9	5.95	4394	2931	6019	814	18.52%
May S01 20	0.72	0.42	1.09	727	425	1103	180	24.65%
May S02 20	0.4	0.18	0.71	407	184	723	139	34.15%
Jun-20	0.8	0.54	1.1	812	545	1115	148	18.15%
Jul-20	1.34	0.74	2.07	1356	746	2094	359	26.43%
Aug-20	2.74	2.01	3.76	2773	2030	3805	461	16.61%
Sep-20	8.25	5.51	11.32	8339	5571	11447	1515	18.16%
Oct-20	0.4	0.19	0.64	404	196	642	122	30.09%
Nov-20	0.18	0.07	0.3	183	74	299	58	31.64%
Dec-20	1.04	0.56	1.57	1049	571	1591	258	24.55%
Jan-21	2.52	1.88	3.32	2547	1904	3352	371	14.56%
Feb-21	1.07	0.55	1.66	1082	558	1683	292	26.95%
Apr S01 21	2.75	1.72	4.05	2783	1735	4090	591	21.22%
Apr S02 21	1.16	0.9	1.49	1177	910	1502	153	12.95%

Table 28: Apportioned density and population estimates of sitting razorbill in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Razorbill	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	1.08	0.55	1.83	1092	560	1846	328	30%
May-19	1.18	0.88	1.56	1192	891	1575	177	14.79%
Jun-19	0.18	0.04	0.41	184	45	414	98	53.26%
Jul-19	2.07	1.36	2.9	2096	1378	2934	414	19.75%
Aug-19	1.49	0.9	2.16	1504	911	2179	318	21.11%
Sep-19	1.21	0.87	1.58	1223	879	1599	189	15.43%
Oct-19	0.66	0.39	0.98	664	392	990	162	24.32%
Nov-19	0.1	0.06	0.15	100	61	148	23	22.46%
Dec-19	0.36	0.16	0.62	366	159	626	116	31.63%
Jan-20	1.39	0.79	2.05	1410	799	2077	339	24%
Feb-20	0.99	0.64	1.41	1002	645	1426	201	20.03%
Mar-20	4.72	3.15	6.17	4772	3184	6237	794	16.62%
May S01 20	0.78	0.46	1.17	791	462	1187	186	23.46%
May S02 20	0.47	0.26	0.75	478	260	754	137	28.67%
Jun-20	0.84	0.57	1.16	851	576	1172	151	17.65%
Jul-20	1.52	0.82	2.34	1539	830	2366	400	25.95%
Aug-20	2.85	2.07	3.94	2880	2097	3981	472	16.36%
Sep-20	8.9	5.98	12.37	8995	6044	12510	1595	17.73%
Oct-20	0.56	0.34	0.81	566	347	819	125	21.95%
Nov-20	0.25	0.14	0.38	255	143	387	65	25.3%
Dec-20	1.48	0.84	2.14	1501	852	2161	324	21.57%
Jan-21	3.04	2.24	4.08	3078	2263	4120	443	14.4%
Feb-21	1.29	0.73	1.88	1302	738	1900	290	22.24%
Apr S01 21	2.99	1.92	4.32	3025	1941	4366	583	19.26%
Apr S02 21	1.31	0.99	1.65	1320	1005	1664	167	12.6%

Table 29: Unapportioned density and population estimates of sitting puffin in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Puffin	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0.76	0.46	1.11	767	463	1128	176	22.86%
May-19	1.55	1.28	1.81	1568	1299	1832	142	9%
Jun-19	0.25	0.11	0.43	257	114	436	85	32.85%
Jul-19	1.63	1.12	2.1	1647	1128	2124	248	15.02%
Aug-19	2.15	1.66	2.67	2177	1674	2701	270	12.41%
Sep-19	0.57	0.21	1.09	577	215	1100	231	40.06%
Oct-19	0.14	0.07	0.22	145	74	226	39	26.63%
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0.02	0	0.04	18	0	40	11	61.99%
Feb-20	0.03	0	0.06	32	0	64	17	52.2%

Table 30: Apportioned density and population estimates of sitting puffin in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Puffin	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-20	0.17	0.06	0.33	175	59	335	73	41.58%
May S01 20	0.62	0.35	0.92	623	354	933	149	23.91%
May S02 20	0.34	0.25	0.44	348	250	445	51	14.48%
Jun-20	0.41	0.25	0.59	413	254	595	88	21.22%
Jul-20	0.62	0.29	1.07	631	291	1081	215	34.09%
Aug-20	1.12	0.72	1.51	1137	730	1529	207	18.13%
Sep-20	10.7	9.08	12.54	10820	9178	12678	921	8.5%
Oct-20	0.06	0.03	0.09	62	30	96	19	30.06%
Nov-20	0.07	0.02	0.14	72	16	144	32	44.41%
Dec-20	0.01	0	0.02	8	0	24	8	95.67%
Jan-21	0.01	0	0.02	9	0	24	8	90.44%
Feb-21	0.19	0.09	0.31	193	96	312	57	29.61%
Apr S01 21	0.39	0.24	0.6	398	238	610	96	24.12%
Apr S02 21	2.87	2.06	3.65	2901	2078	3686	431	14.85%
Mar-19	1.1	0.71	1.52	1112	719	1542	217	19.46%
May-19	1.93	1.58	2.32	1956	1595	2341	200	10.23%
Jun-19	0.31	0.15	0.51	314	152	519	92	29.13%
Jul-19	2.85	2.11	3.59	2877	2130	3630	409	14.19%
Aug-19	3.38	2.56	4.1	3416	2590	4145	408	11.93%
Sep-19	0.91	0.54	1.48	924	551	1496	253	27.34%
Oct-19	0.24	0.16	0.34	241	163	343	47	19.43%
Nov-19	0.02	0.01	0.04	25	9	44	10	37.69%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0.05	0.02	0.08	46	22	80	15	32.19%
Feb-20	0.16	0.08	0.28	163	77	283	55	33.35%
Mar-20	0.39	0.21	0.6	391	209	608	102	25.96%
May S01 20	1.6	0.9	2.18	1623	914	2207	335	20.61%
May S02 20	0.62	0.45	0.79	626	460	799	88	14.01%
Jun-20	0.73	0.51	0.95	734	518	960	119	16.16%
Jul-20	0.87	0.44	1.49	880	444	1505	280	31.79%
Aug-20	1.64	1.15	2.25	1654	1164	2273	286	17.27%
Sep-20	11.76	9.85	14.02	11892	9956	14175	1080	9.08%
Oct-20	0.12	0.09	0.16	120	87	158	19	15.77%
Nov-20	0.12	0.06	0.18	123	66	187	32	25.51%
Dec-20	0.03	0.01	0.05	27	13	47	9	33.27%
Jan-21	0.02	0.01	0.04	23	11	40	9	36.79%
Feb-21	0.35	0.22	0.5	354	219	502	77	21.79%
Apr S01 21	0.81	0.55	1.11	817	554	1127	150	18.28%
Apr S02 21	4.11	3.06	5.2	4155	3097	5254	581	13.98%

Table 31: Unapportioned density and population estimates of sitting red-throated diver in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Red-throated diver / Survey	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Mar-19	0	0	0	0	0	0	0	0
May-19	0.02	0	0.04	17	0	40	11	62.56%
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.01	0	0.02	9	0	24	8	92.7%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0.01	0	0.03	16	0	32	10	61.76%
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0.01	0	0.02	8	0	24	8	94.98%

Table 32: Apportioned density and population estimates of sitting red-throated diver in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Red-throated diver / Survey	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Mar-19	0	0	0	0	0	0	0	0
May-19	0.02	0	0.04	21	0	44	11	51.92%
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0.01	0	0.02	8	0	24	8	96.63%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0.01	0	0.03	9	0	31	9	91.28%
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0.02	0	0.04	16	0	37	10	63.27%
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0.01	0	0.02	8	0	24	8	96.58%

Table 33: Unapportioned density and population estimates of sitting fulmar in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Fulmar / Survey	Density Estimate (birds/km²)	Lower 95% CI (birds/km²)	Upper 95% CI (birds/km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Mar-19	0.11	0.06	0.19	115	59	190	34	29.26%
May-19	0.04	0.01	0.08	40	8	84	20	48.51%
Jun-19	0.03	0	0.07	32	0	76	20	63.68%
Jul-19	0.05	0.01	0.09	53	15	91	20	37.3%
Aug-19	0.02	0	0.06	24	0	62	18	73.29%
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0.02	0	0.04	22	5	43	11	46.06%
Nov-19	0.07	0.01	0.14	72	15	147	36	50.2%
Dec-19	0.05	0	0.13	48	0	127	35	72.25%
Jan-20	0.06	0	0.12	58	0	118	33	56.55%
Feb-20	0.01	0	0.02	9	0	24	8	90.09%
Mar-20	0.01	0	0.03	10	0	34	10	100.84%
May S01 20	0.03	0	0.07	27	0	67	18	66.05%
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0.03	0.01	0.06	33	8	62	14	40.87%
Aug-20	0.02	0	0.05	16	0	48	17	102.36%
Sep-20	0.32	0.15	0.53	325	157	536	100	30.74%
Oct-20	0.17	0.06	0.31	172	62	309	64	37.25%
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0.06	0.01	0.12	56	8	118	29	50.31%
Jan-21	0.02	0	0.05	16	0	48	15	96.16%
Feb-21	0.05	0.01	0.09	48	12	94	21	44.17%
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0.05	0.02	0.1	56	23	103	22	38.12%

Table 34: Apportioned density and population estimates of sitting fulmar in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Fulmar	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0.12	0.06	0.19	121	62	196	34	28.17%
May-19	0.04	0.01	0.08	41	8	78	19	45.15%
Jun-19	0.05	0.02	0.09	52	17	92	21	38.81%
Jul-19	0.07	0.04	0.11	72	37	110	20	26.61%
Aug-19	0.02	0	0.06	24	0	63	17	70.05%
Sep-19	0.01	0	0.02	9	0	24	9	98.46%
Oct-19	0.03	0.01	0.05	27	6	49	13	45.09%
Nov-19	0.08	0.02	0.15	79	21	156	36	44.95%
Dec-19	0.05	0	0.14	53	0	139	38	71.65%
Jan-20	0.06	0.01	0.13	66	9	134	32	48.12%
Feb-20	0.02	0	0.06	24	0	61	17	70.32%
Mar-20	0.01	0	0.03	9	0	26	9	94.27%
May S01 20	0.06	0.02	0.13	58	16	128	32	53.93%
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0.04	0.01	0.07	38	10	69	16	41.12%
Aug-20	0.02	0	0.05	16	0	48	16	99.73%
Sep-20	0.43	0.22	0.65	431	218	656	111	25.71%
Oct-20	0.17	0.07	0.29	173	70	295	60	34.57%
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0.06	0.02	0.12	65	16	126	30	45.68%
Jan-21	0.02	0	0.05	16	0	47	15	95.06%
Feb-21	0.08	0.02	0.16	86	16	166	39	44.95%
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0.12	0.05	0.23	124	51	231	50	39.76%

Table 35: Unapportioned density and population estimates of sitting Manx shearwater in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Manx shearwater	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0

Sitting Manx shearwater	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 36: Apportioned density and population estimates of sitting Manx shearwaters in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Manx shearwater	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0.01	0	0.02	8	0	24	8	98.36%
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0.02	0	0.05	16	0	48	16	102.43%
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 37: Unapportioned density and population estimates of sitting gannet in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Gannet	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0.13	0.02	0.3	132	22	303	76	57.49%
May-19	0.3	0.11	0.52	300	115	531	108	35.89%
Jun-19	0.82	0.62	1.07	831	631	1083	120	14.37%
Jul-19	2.04	1.56	2.47	2063	1576	2498	254	12.27%
Aug-19	1.97	1.61	2.35	1994	1627	2380	192	9.62%
Sep-19	0.2	0.12	0.29	201	125	290	41	20.36%
Oct-19	0.31	0.23	0.43	315	228	431	53	16.73%
Nov-19	0.04	0.01	0.08	40	8	76	18	42.88%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0.01	0	0.02	9	0	24	8	95.54%
Mar-20	0.07	0.01	0.16	69	9	164	41	59.53%
May S01 20	0.12	0	0.3	124	0	304	82	65.8%
May S02 20	0.09	0.04	0.14	87	39	144	29	32.7%
Jun-20	0.24	0.06	0.5	248	65	509	125	50.15%
Jul-20	1.93	1.5	2.41	1956	1517	2432	238	12.15%
Aug-20	1.73	1.19	2.26	1753	1205	2288	277	15.76%
Sep-20	0.47	0.3	0.66	480	301	671	96	19.9%
Oct-20	0.48	0.29	0.71	483	292	723	116	23.93%
Nov-20	0.44	0.29	0.59	441	291	599	83	18.66%
Dec-20	0.17	0.02	0.44	177	23	445	116	65.27%
Jan-21	0.04	0	0.09	41	0	88	24	57.05%
Feb-21	0.09	0	0.2	88	0	202	56	63.22%
Apr S01 21	0.1	0.05	0.16	103	48	164	31	29.33%
Apr S02 21	0.81	0.12	1.93	817	126	1949	483	59.07%

Sitting Gannet	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
May S01 20	0.12	0.01	0.28	120	8	283	75	62.07%
May S02 20	0.09	0.04	0.16	90	40	158	30	32.74%
Jun-20	0.26	0.05	0.52	261	48	528	123	47.15%
Jul-20	1.95	1.51	2.42	1972	1532	2446	237	12%
Aug-20	1.71	1.17	2.25	1729	1183	2271	274	15.83%
Sep-20	0.46	0.27	0.66	470	277	670	100	21.21%
Oct-20	0.47	0.28	0.7	473	283	710	110	23.24%
Nov-20	0.44	0.29	0.6	444	296	607	80	17.92%
Dec-20	0.18	0.02	0.52	186	24	522	124	66.7%
Jan-21	0.04	0	0.08	40	0	85	22	54.84%
Feb-21	0.09	0	0.2	87	0	201	57	64.78%
Apr S01 21	0.1	0.05	0.16	105	53	164	31	29.16%
Apr S02 21	0.85	0.16	1.92	857	159	1943	487	56.8%

Table 38: Apportioned density and population estimates of sitting gannet in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Gannet	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0.13	0.02	0.27	128	20	278	71	55.57%
May-19	0.31	0.13	0.54	316	129	549	110	34.62%
Jun-19	0.83	0.59	1.08	836	600	1094	119	14.23%
Jul-19	2.04	1.59	2.52	2061	1606	2550	244	11.84%
Aug-19	1.99	1.63	2.33	2008	1645	2351	191	9.5%
Sep-19	0.2	0.13	0.29	201	128	292	44	21.6%
Oct-19	0.31	0.21	0.42	317	217	420	54	16.85%
Nov-19	0.04	0.01	0.08	39	8	77	18	45.98%
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0.01	0	0.02	8	0	24	8	92.47%
Mar-20	0.07	0.01	0.15	68	9	152	40	59.14%

Table 39: Unapportioned density and population estimates of sitting shag in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Shag	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0

Table 40: Apportioned density and population estimates of sitting shag in the Berwick Bank Development array only, calculated using design-based analysis

Sitting Shag	Density Estimate (birds/ km²)	Lower 95% CI (birds/ km²)	Upper 95% CI (birds/ km²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Survey								
Mar-19	0	0	0	0	0	0	0	0
May-19	0	0	0	0	0	0	0	0
Jun-19	0	0	0	0	0	0	0	0
Jul-19	0	0	0	0	0	0	0	0
Aug-19	0	0	0	0	0	0	0	0
Sep-19	0	0	0	0	0	0	0	0
Oct-19	0	0	0	0	0	0	0	0
Nov-19	0	0	0	0	0	0	0	0
Dec-19	0	0	0	0	0	0	0	0
Jan-20	0	0	0	0	0	0	0	0
Feb-20	0	0	0	0	0	0	0	0
Mar-20	0	0	0	0	0	0	0	0
May S01 20	0	0	0	0	0	0	0	0
May S02 20	0	0	0	0	0	0	0	0
Jun-20	0	0	0	0	0	0	0	0
Jul-20	0	0	0	0	0	0	0	0
Aug-20	0	0	0	0	0	0	0	0
Sep-20	0	0	0	0	0	0	0	0
Oct-20	0	0	0	0	0	0	0	0
Nov-20	0	0	0	0	0	0	0	0
Dec-20	0	0	0	0	0	0	0	0
Jan-21	0	0	0	0	0	0	0	0
Feb-21	0	0	0	0	0	0	0	0
Apr S01 21	0	0	0	0	0	0	0	0
Apr S02 21	0	0	0	0	0	0	0	0