

BERWICK BANK WIND FARM OFFSHORE ENVIRONMENTAL IMPACT ASSESSMENT

**APPENDIX 11.1, ANNEX B:
DESIGN-BASED ANALYSIS –
MONTHLY POPULATION
ESTIMATES (BERWICK BANK
DEVELOPMENT AREA PLUS
16KM BUFFER)**

Document Status

Version	Purpose of Document	Authored by	Reviewed by	Approved by	Review Date
Final	SSER Review	HiDef Aerial Surveying Ltd.	HiDef Aerial Surveying Ltd.	HiDef Aerial Surveying Ltd.	July 2022

Compiled by HiDef Aerial Surveying Ltd.

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Approval for Issue

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NOTE

This annex provides both apportioned (detections assigned from species groups to species) and unapportioned (detections assigned to species only) density and population estimates for all species on a survey-by-survey basis within the Offshore Ornithology Study Area. 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 the Baseline Report and Annex F)

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Table 1: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 1 on 28 March 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	20.41	14.6	27.6	81170	58070	109782	13047	16.07%
Species group								
Grebe species	0	0	0	7	0	20	7	91.19%
Wader species	0.03	0	0.07	120	11	268	70	58.24%
Small gull species	11.74	7.14	17.17	46682	28404	68281	10172	21.79%
Black-backed gull species	0	0	0	7	0	19	7	96.49%
Large gull species	0.01	0	0.01	25	6	51	12	47.42%
Gull species	0.01	0.01	0.02	56	21	97	20	35.51%
Large auk	6.81	5.2	8.52	27091	20690	33869	3579	13.21%
Small auk	0.38	0.23	0.52	1522	932	2084	302	19.80%
Auk species	1.29	1.07	1.54	5151	4269	6122	475	9.20%
Auk / small gull	0.03	0.02	0.05	130	72	198	33	25.20%
Fulmar / gull species	0.21	0.13	0.31	829	537	1248	189	22.72%
Gannet species	0.25	0.18	0.34	992	715	1345	166	16.73%
Passerine species	0	0	0.01	19	0	49	14	73.36%

Table 2: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 1 on 28 March 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Wood pigeon	0	0	0	7	0	19	6	87.51%
Red-necked grebe	0	0	0	6	0	19	6	93.70%
Golden plover	0.02	0	0.06	91	0	222	58	63.46%
Curlew	0	0	0.01	7	0	21	6	91.70%
Kittiwake	11.81	7.09	17.24	46965	28202	68584	10136	21.58%
Common gull	0.01	0	0.02	31	7	63	15	48.28%
Great black-backed gull	0	0	0.01	13	0	30	9	67.02%
Herring gull	0	0	0.01	19	0	39	10	52.53%
Little auk	0	0	0.01	13	0	31	9	66.62%
Guillemot	5.72	4.44	7.11	22761	17673	28289	2766	12.15%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Razorbill	0.93	0.68	1.24	3705	2686	4932	581	15.68%
Puffin	1.02	0.78	1.26	4070	3103	5023	514	12.62%
Fulmar	0.16	0.12	0.21	634	461	828	92	14.46%
Gannet	0.25	0.17	0.34	982	657	1359	178	18.04%

Table 3: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 1 on 28 March 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Wood pigeon	0	0	0.01	20	0	48	14	69.19%
Red-necked grebe	0	0	0.01	7	0	21	7	96.82%
Golden plover	0.03	0	0.07	113	0	262	72	63.46%
Curlew	0	0	0.01	8	0	21	7	83.91%
Kittiwake	11.76	7.34	16.82	46777	29188	66887	9961	21.29%
Common gull	0.01	0	0.02	31	7	61	15	45.67%
Great black-backed gull	0	0	0.01	14	0	32	9	66.33%
Herring gull	0	0	0.01	19	0	39	10	52.95%
Little auk	0	0	0.01	19	5	36	9	46.31%
Guillemot	6.09	4.72	7.59	24236	18757	30172	3029	12.50%
Razorbill	1	0.75	1.32	3992	2982	5266	581	14.54%
Puffin	1.37	1.12	1.62	5468	4453	6463	529	9.67%
Fulmar	0.16	0.11	0.21	639	456	817	97	15.18%
Gannet	0.25	0.17	0.34	999	683	1370	180	17.94%

Table 4: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 2 on 14 May 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	26.22	22.59	30.08	104283	89843	119637	8049	7.72%
Species								
Small gull species	2.49	1.95	3.09	9918	7768	12297	1172	11.81%
Black-backed gull species	0	0	0.01	8	0	24	8	106.78%
Large gull species	0.01	0	0.02	25	0	64	18	72.38%
Gull species	0.01	0	0.02	32	0	95	30	92.21%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Arctic / common tern	0.03	0.01	0.06	110	24	221	52	47.11%
Skua species	0	0	0.01	17	0	40	11	65.02%
Large auk	20.53	16.82	23.76	81643	66881	94495	7169	8.78%
Small auk	0.65	0.5	0.82	2593	1970	3250	320	12.31%
Auk species	1.69	1.48	1.9	6725	5895	7549	434	6.44%
Auk / small gull	0.1	0.07	0.14	396	267	557	75	18.92%
Large auk / diver species	0.01	0	0.02	48	16	87	18	36.81%
Auk / shearwater species	0.01	0	0.02	25	0	64	17	68.90%
Diver species	0.01	0	0.02	33	0	80	20	60.84%
Fulmar / gull species	0.08	0.05	0.11	317	217	455	61	19.22%
Gannet species	0.68	0.52	0.88	2710	2053	3486	352	12.97%
Passerine species	0	0	0.01	8	0	24	8	102.57%
Small bird species	0	0	0.01	17	0	40	11	62.64%

Table 5: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 2 on 14 May 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Wood pigeon	0	0	0.01	9	0	24	9	100.78%
Kittiwake	2.52	1.93	3.14	10032	7666	12475	1243	12.38%
Common gull	0	0	0.01	9	0	24	9	101.82%
Herring gull	0	0	0.01	17	0	48	17	98.90%
Lesser black-backed gull	0	0	0.01	17	0	40	11	67.49%
Arctic tern	0	0	0.01	8	0	24	8	95.99%
Great skua	0	0	0.01	8	0	24	8	99.44%
Arctic skua	0	0	0.01	9	0	24	8	96.66%
Guillemot	19.38	16.18	22.68	77091	64367	90192	6733	8.73%
Razorbill	1.02	0.84	1.23	4072	3360	4895	398	9.77%
Puffin	1.43	1.22	1.61	5680	4853	6398	392	6.90%
Red-throated diver	0.01	0	0.02	41	8	87	20	49.26%
Fulmar	0.07	0.05	0.1	289	180	414	62	21.23%
Gannet	0.69	0.53	0.89	2743	2092	3546	366	13.31%

Table 6: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 2 on 14 May 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Wood pigeon	0	0	0.01	8	0	24	8	103.98%
Kittiwake	2.55	1.91	3.12	10128	7603	12405	1210	11.95%
Common gull	0	0	0.01	9	0	25	9	94%
Herring gull	0	0	0.01	17	0	48	17	99.13%
Lesser black-backed gull	0	0	0.01	15	0	40	12	74.05%
Arctic tern	0.02	0	0.04	78	16	170	43	55.53%
Great skua	0	0	0.01	8	0	24	8	93.54%
Arctic skua	0	0	0.01	9	0	24	8	91.86%
Guillemot	20	16.42	23.77	79527	65308	94550	7364	9.26%
Razorbill	1.12	0.91	1.33	4458	3610	5308	419	9.40%
Puffin	1.8	1.59	2.01	7177	6317	7979	429	5.98%
Red-throated diver	0.01	0.01	0.02	57	22	98	21	35.93%
Fulmar	0.08	0.05	0.11	303	200	429	61	19.96%
Gannet	0.68	0.5	0.87	2688	2002	3475	368	13.69%

Table 7: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 3 on 21 June 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	10.13	8.16	12.12	40299	32440	48223	4119	10.22%
Species								
Duck species	0	0	0.01	16	0	48	16	100.34%
Small gull species	2	1.59	2.48	7968	6315	9849	946	11.87%
Black-backed gull species	0.03	0.01	0.05	102	24	216	54	52.71%
Large gull species	0.48	0.32	0.67	1910	1271	2658	357	18.67%
Gull species	0.09	0.04	0.15	370	151	609	116	31.28%
Arctic / common tern	0.02	0.01	0.05	98	32	180	40	40.82%
Tern species	0	0	0.01	17	0	40	12	73.24%
Tern / small gull species	0	0	0.01	8	0	24	8	94.09%
Skua species excluding great	0	0	0.01	8	0	24	8	96.09%
Large auk	4.22	3.19	5.38	16798	12685	21405	2117	12.60%
Small auk	0.53	0.22	0.95	2126	857	3765	738	34.72%
Auk species	1.35	0.79	1.87	5351	3152	7425	1109	20.72%
Auk / small gull	0.05	0.02	0.07	182	93	295	54	29.25%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Auk / shearwater species	0	0	0.01	8	0	24	8	99.49%
Diver species	0	0	0.01	17	0	40	11	68.10%
Fulmar / gull species	0.1	0.06	0.15	407	246	598	94	23.12%
Shearwater species	0.02	0	0.04	74	12	147	36	47.82%
Gannet species	1.18	0.98	1.42	4683	3913	5639	439	9.36%
Cormorant / shag	0.01	0	0.02	25	0	94	25	102.74%

Table 8: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 3 on 21 June 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Common scoter	0	0	0.01	16	0	48	16	100.26%
Kittiwake	2.05	1.58	2.63	8153	6292	10464	1012	12.41%
Great black-backed gull	0.03	0.01	0.06	117	24	256	62	52.89%
Herring gull	0.47	0.27	0.68	1874	1060	2688	405	21.59%
Lesser black-backed gull	0.04	0.02	0.06	144	72	233	41	27.90%
Sandwich tern	0	0	0.01	9	0	28	9	99.04%
Arctic skua	0	0	0.01	8	0	24	8	98.03%
Guillemot	4.2	3.23	5.18	16704	12830	20607	2024	12.12%
Razorbill	0.27	0.16	0.38	1074	626	1509	228	21.19%
Puffin	1.11	0.55	1.8	4422	2200	7158	1320	29.84%
Red-throated diver	0	0	0.01	17	0	40	12	67.73%
Fulmar	0.04	0.01	0.09	177	48	359	84	47.53%
Manx shearwater	0.02	0	0.04	73	16	146	35	47.41%
Gannet	1.19	0.99	1.4	4738	3929	5574	435	9.18%
Shag	0.01	0	0.02	24	0	72	25	103.39%

Table 9: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 3 on 21 June 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Common scoter	0	0	0.01	16	0	48	16	101.96%
Kittiwake	2.09	1.65	2.65	8302	6577	10534	1029	12.39%
Great black-backed gull	0.03	0.01	0.07	129	26	280	67	51.36%
Herring gull	0.51	0.34	0.73	2036	1344	2912	396	19.43%
Lesser black-backed gull	0.04	0.02	0.06	168	94	251	41	24.06%
Sandwich tern	0	0	0.01	8	0	24	8	101.36%
Arctic tern	0.02	0	0.03	71	16	133	31	42.96%
Arctic skua	0	0	0.01	8	0	24	8	102.77%
Guillemot	4.47	3.47	5.5	17765	13813	21878	2165	12.18%
Razorbill	0.3	0.19	0.43	1207	762	1714	248	20.56%
Puffin	1.28	0.63	2.17	5079	2488	8624	1550	30.51%
Red-throated diver	0	0	0.01	18	0	40	12	66.88%
Fulmar	0.06	0.03	0.12	253	127	462	84	33.03%
Manx shearwater	0.02	0	0.04	72	16	150	36	49.23%
Gannet	1.19	1	1.44	4751	3982	5713	448	9.42%
Shag	0.01	0	0.02	23	0	72	24	106.55%

Table 10: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 4 on 23 July 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	32.55	26.21	38.35	129473	104244	152536	12311	9.51%
Species								
Wader species	0.01	0	0.02	24	0	76	24	97.07%
Small gull species	3.67	3.12	4.39	14607	12421	17460	1348	9.23%
Black-backed gull species	0.01	0	0.03	58	16	108	25	42.03%
Large gull species	0.26	0.19	0.33	1036	741	1311	147	14.19%
Gull species	0.06	0.03	0.1	238	130	385	64	26.79%
Arctic / common tern	1.64	1.28	2	6514	5090	7952	717	11%
Tern species	0.02	0.01	0.03	64	25	109	23	34.46%
Tern / small gull species	0.03	0.01	0.05	105	47	184	36	33.78%
Skua species	0.01	0	0.02	34	9	62	15	42.32%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Large auk	20.3	14.9	25.52	80721	59280	101513	11101	13.75%
Small auk	0.45	0.32	0.6	1802	1290	2389	285	15.77%
Auk species	3.21	2.45	4.15	12755	9761	16513	1683	13.19%
Auk / small gull	0.03	0.01	0.04	104	35	178	38	36.52%
Large auk / diver species	0	0	0.01	17	0	37	11	61.30%
Fulmar / gull species	0.08	0.06	0.11	335	243	439	52	15.44%
Gannet species	3.14	2.79	3.49	12483	11116	13881	708	5.67%
Passerine species	0	0	0.01	8	0	26	8	96.31%

Table 11: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 4 on 23 July 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Rock dove	0	0	0.01	9	0	27	8	95.19%
Kittiwake	3.69	3.16	4.48	14685	12560	17822	1317	8.97%
Little gull	0.01	0	0.02	41	15	71	16	37.17%
Common gull	0.01	0	0.02	33	0	75	19	55.36%
Great black-backed gull	0.01	0	0.02	32	0	65	17	50.89%
Herring gull	0.21	0.14	0.28	822	576	1111	138	16.74%
Lesser black-backed gull	0.06	0.04	0.08	248	172	338	43	17.20%
Common tern	0.01	0	0.02	24	0	75	24	98.65%
Arctic tern	0.08	0.05	0.13	327	184	517	85	25.86%
Great skua	0.01	0	0.01	32	9	57	14	41.96%
Guillemot	17.21	12.88	21.55	68441	51216	85717	8983	13.12%
Razorbill	1.6	0.84	2.34	6350	3336	9308	1539	24.22%
Puffin	2.22	1.64	3.04	8822	6520	12077	1456	16.49%
Fulmar	0.05	0.04	0.07	211	142	284	39	18.12%
Gannet	3.14	2.8	3.5	12499	11138	13929	693	5.54%

Table 12: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 4 on 23 July 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Rock dove	0	0	0.01	8	0	26	8	99.27%
Kittiwake	3.72	3.12	4.43	14796	12415	17614	1311	8.86%
Little gull	0.01	0	0.02	42	12	73	16	37.29%
Common gull	0.01	0	0.02	33	1	70	18	52.06%
Great black-backed gull	0.01	0	0.02	34	2	75	18	53.49%
Herring gull	0.23	0.17	0.31	910	657	1219	140	15.36%
Lesser black-backed gull	0.06	0.04	0.09	258	178	341	43	16.60%
Common tern	0.07	0.04	0.09	264	176	364	48	18.16%
Arctic tern	0.95	0.71	1.26	3777	2825	4999	574	15.17%
Great skua	0.01	0	0.01	32	8	60	14	43.42%
Guillemot	18.95	13.81	23.55	75387	54911	93650	10276	13.63%
Razorbill	1.78	0.89	2.6	7069	3535	10355	1723	24.37%
Puffin	3.33	2.57	4.25	13237	10221	16917	1629	12.30%
Fulmar	0.07	0.05	0.09	265	194	347	40	14.75%
Gannet	3.15	2.83	3.5	12522	11274	13921	681	5.43%

Table 13: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 5 on 06 August 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	50.82	38.39	64.38	202145	152696	256041	27122	13.42%
Species								
Wader species	0.06	0	0.16	236	16	642	184	77.93%
Small gull species	8.21	6.79	9.62	32670	27000	38264	2914	8.92%
Black-backed gull species	0.01	0	0.02	41	9	69	16	39.22%
Large gull species	0.21	0.12	0.32	843	486	1289	212	25.08%
Gull species	0.05	0.02	0.09	185	80	363	73	39.11%
Arctic / common tern	2.76	2.24	3.42	10995	8892	13587	1271	11.55%
Tern species	0.09	0.04	0.14	352	161	574	104	29.48%
Tern / small gull species	0.05	0.02	0.09	212	80	360	73	34.19%
Large auk	31.84	22.58	42.62	126632	89806	169503	20681	16.33%
Small auk	0.28	0.14	0.46	1122	560	1812	311	27.70%
Auk species	3.05	2.27	3.92	12121	9014	15600	1686	13.91%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Auk / small gull	0.08	0.04	0.13	330	164	518	95	28.76%
Auk / shearwater species	0	0	0.01	16	0	41	12	72.16%
Fulmar / gull species	0.08	0.05	0.11	321	218	437	56	17.31%
Shearwater species	0	0	0.01	9	0	31	9	97.07%
Gannet species	4.08	3.42	4.73	16214	13613	18799	1381	8.52%
Small bird species	0.03	0	0.06	109	17	247	63	57.67%
Wader species	0.06	0	0.16	236	16	642	184	77.93%

Table 14: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 5 on 06 August 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Curlew	0	0	0.01	9	0	25	8	95.65%
Kittiwake	8.25	6.8	9.71	32806	27033	38625	2915	8.89%
Little gull	0.02	0.01	0.03	66	25	114	24	35.98%
Common gull	0.01	0	0.01	24	0	56	14	56.18%
Great black-backed gull	0	0	0.01	9	0	26	8	91.40%
Herring gull	0.2	0.1	0.32	788	384	1254	228	28.94%
Lesser black-backed gull	0.03	0.02	0.05	129	70	199	34	25.63%
Sandwich tern	0.02	0	0.04	65	0	165	41	61.92%
Common tern	0.01	0	0.02	32	8	61	14	43.74%
Arctic tern	0.07	0.04	0.1	271	155	410	66	24.16%
Guillemot	28.86	19.86	38.97	114798	78987	155001	19209	16.73%
Razorbill	1.85	1.26	2.5	7378	5022	9942	1300	17.62%
Puffin	1.76	1.26	2.33	6999	5029	9252	1068	15.26%
Fulmar	0.06	0.04	0.08	225	152	303	40	17.62%
Manx shearwater	0	0	0.01	9	0	25	8	95.01%
Gannet	4.08	3.43	4.77	16223	13624	18981	1402	8.64%

Table 15: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 5 on 06 August 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Curlew	0.06	0	0.16	227	8	648	199	87.50%
Kittiwake	8.29	7.03	9.59	32962	27947	38159	2735	8.30%
Little gull	0.03	0.01	0.06	137	57	222	45	32.34%
Common gull	0.01	0	0.01	25	0	55	14	55.19%
Great black-backed gull	0	0	0.01	9	0	29	9	94.38%
Herring gull	0.22	0.12	0.34	876	472	1343	233	26.58%
Lesser black-backed gull	0.03	0.02	0.05	133	71	197	32	23.57%
Sandwich tern	0.04	0.01	0.07	148	53	262	54	35.91%
Common tern	0.13	0.1	0.16	520	410	625	58	11.08%
Arctic tern	1.61	1.32	1.93	6415	5239	7668	636	9.90%
Guillemot	30	20.36	41.59	119331	80995	165429	21920	18.37%
Razorbill	1.99	1.35	2.63	7909	5389	10471	1340	16.94%
Puffin	2.84	2.11	3.66	11302	8392	14554	1570	13.89%
Fulmar	0.07	0.05	0.1	273	187	379	50	18.34%
Manx shearwater	0	0	0.01	18	0	45	13	71.87%
Gannet	4.06	3.42	4.79	16143	13600	19033	1376	8.52%

Table 16: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 6 on 15 September 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	11.31	10.31	12.31	44989	41025	48979	1997	4.44%
Species								
Goose species	0.03	0	0.1	138	0	406	133	96.16%
Wader species	0.09	0.02	0.18	377	75	728	172	45.61%
Small gull species	1.62	1.21	2.03	6440	4822	8093	863	13.39%
Large gull species	0	0	0.01	16	0	40	11	67.64%
Gull species	0.01	0	0.02	40	0	86	22	55.08%
Arctic / common tern	0.02	0	0.03	65	20	115	25	37.43%
Skua species	0	0	0.01	17	0	40	12	71.80%
Large auk	5.64	5.09	6.3	22434	20245	25038	1257	5.60%
Small auk	0.22	0.11	0.37	882	429	1455	258	29.24%
Auk species	1.25	0.89	1.64	4983	3541	6535	758	15.20%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Auk / small gull	0.01	0	0.02	40	0	96	26	64.80%
Auk / shearwater species	0.01	0	0.02	41	0	96	26	62.02%
Fulmar / gull species	0.05	0.03	0.07	206	126	296	46	21.89%
Gannet species	2.31	2.03	2.59	9181	8082	10285	571	6.21%
Small bird species	0	0	0.01	9	0	32	9	93.53%

Table 17: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 6 on 15 September 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Pink-footed goose	0.04	0	0.1	141	0	406	136	96.67%
Golden plover	0.08	0.01	0.17	318	51	661	156	48.89%
Kittiwake	1.62	1.17	2.05	6459	4669	8168	930	14.39%
Great black-backed gull	0	0	0.01	8	0	24	8	101.85%
Herring gull	0	0	0.01	8	0	24	8	99.32%
Lesser black-backed gull	0	0	0.01	17	0	48	16	95.67%
Great skua	0	0	0.01	16	0	40	11	68.21%
Guillemot	3.63	3.12	4.21	14450	12408	16748	1111	7.69%
Razorbill	1.04	0.83	1.22	4130	3317	4871	403	9.75%
Puffin	0.79	0.52	1.11	3130	2061	4415	629	20.08%
Fulmar	0.05	0.03	0.07	183	103	264	42	22.92%
Manx shearwater	0.01	0	0.02	22	0	71	22	99.63%
Gannet	2.3	2.02	2.58	9160	8029	10264	595	6.49%

Table 18: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 6 on 15 September 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Pink-footed goose	0.03	0	0.13	139	0	530	148	106.57%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Golden plover	0.09	0.02	0.19	369	87	762	173	46.92%
Kittiwake	1.6	1.2	2.03	6368	4775	8070	884	13.88%
Little gull	0	0	0	1	0	1	1	72.36%
Great black-backed gull	0	0	0.01	8	0	24	8	105.09%
Herring gull	0	0	0.01	8	0	28	9	105.49%
Lesser black-backed gull	0.01	0	0.02	25	0	61	17	68.37%
Great skua	0	0	0.01	16	0	40	12	69.91%
Guillemot	4.54	3.97	5.14	18071	15797	20458	1159	6.41%
Razorbill	1.27	1.06	1.49	5032	4223	5943	432	8.57%
Puffin	1.31	0.9	1.75	5218	3587	6948	842	16.13%
Fulmar	0.05	0.03	0.07	209	130	296	44	20.66%
Manx shearwater	0.01	0	0.03	37	0	101	26	70.09%
Gannet	2.3	2.03	2.59	9159	8082	10299	565	6.17%

Table 19: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 7 on 17 October 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	10.71	5.89	17.82	42583	23444	70860	12151	28.53%
Species								
Duck species	0.01	0	0.02	24	0	63	18	74.20%
Small gull species	1.35	0.68	2.45	5382	2701	9733	1871	34.77%
Gull species	0.02	0	0.03	66	15	133	31	45.97%
Skua species excluding great	0	0	0.01	16	0	40	11	71.16%
Large auk	7.13	3.52	12.41	28344	14012	49374	8845	31.20%
Small auk	0.09	0.04	0.15	364	157	617	118	32.28%
Auk species	0.68	0.5	0.9	2715	1971	3592	422	15.54%
Auk / small gull	0.04	0.02	0.06	152	74	242	44	28.69%
Auk / shearwater species	0.01	0	0.02	31	0	95	29	94.31%
Diver species	0	0	0.01	8	0	24	8	94.52%
Fulmar / gull species	0.02	0.01	0.03	70	31	106	20	27.66%
Gannet species	1.32	0.83	1.97	5259	3283	7833	1224	23.26%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Passerine species	0.08	0	0.24	305	0	968	270	88.42%
Small bird species	0.02	0	0.05	69	0	196	59	85.86%

Table 20: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 7 on 17 October 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Teal	0	0	0.01	15	0	49	15	99.83%
Goosander	0	0	0.01	8	0	26	8	105.24%
Kittiwake	1.34	0.7	2.58	5341	2799	10258	1925	36.04%
Common gull	0.03	0.01	0.06	125	41	251	55	44.06%
Herring gull	0	0	0.01	8	0	23	7	92.96%
Arctic skua	0	0	0.01	16	0	41	11	65.91%
Little auk	0.01	0	0.01	23	0	58	16	70.47%
Guillemot	4.33	2.24	7.33	17217	8920	29136	5134	29.82%
Razorbill	2.17	0.93	3.52	8622	3716	14016	2828	32.80%
Puffin	0.19	0.11	0.28	738	456	1101	167	22.54%
Red-throated diver	0	0	0.01	8	0	25	8	96.78%
Fulmar	0.01	0	0.02	53	20	87	18	32.72%
Gannet	1.33	0.85	2.02	5291	3379	8015	1224	23.13%
Redwing	0.06	0	0.21	247	0	853	268	108.53%

Table 21: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 7 on 17 October 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Teal	0	0	0.01	17	0	56	17	100.69%
Goosander	0	0	0.01	8	0	25	8	98.42%
Kittiwake	1.34	0.7	2.34	5325	2792	9326	1806	33.91%
Black-headed gull	0	0	0	1	0	1	1	51.02%
Common gull	0.03	0.01	0.07	123	31	266	58	46.92%
Herring gull	0	0	0.01	7	0	23	7	98.26%
Arctic skua	0	0	0.01	16	0	37	10	65.08%
Little auk	0.01	0	0.02	41	17	75	16	37.48%
Guillemot	4.86	2.49	8.25	19314	9889	32829	6081	31.48%
Razorbill	2.75	1.2	4.56	10947	4768	18144	3571	32.62%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Puffin	0.35	0.24	0.5	1375	970	1973	260	18.89%
Red-throated diver	0	0	0.01	8	0	25	8	98.22%
Fulmar	0.02	0.01	0.03	67	30	105	20	29.80%
Gannet	1.33	0.85	2.04	5275	3392	8119	1275	24.16%
Redwing	0.08	0	0.22	326	7	878	259	79.47%

Table 22: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 8 on 19 November 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	3.6	2.19	5.33	14311	8729	21203	3332	23.28%
Species								
Small gull species	0.56	0.29	0.88	2210	1171	3507	627	28.37%
Black-backed gull species	0.02	0	0.06	95	8	225	58	61.43%
Large gull species	0.4	0.09	0.86	1610	340	3429	791	49.10%
Gull species	0.09	0.04	0.17	363	145	662	137	37.71%
Large auk	1.89	1.1	2.72	7525	4370	10836	1715	22.79%
Small auk	0.01	0	0.02	41	8	82	20	49.40%
Auk species	0.17	0.09	0.27	674	354	1087	184	27.24%
Auk / small gull	0.02	0.01	0.04	85	33	147	29	34.30%
Auk / shearwater species	0	0	0.01	8	0	24	8	99.34%
Diver species	0	0	0.01	8	0	25	8	95.40%
Fulmar / gull species	0.15	0.1	0.2	593	417	784	96	16.06%
Gannet species	0.26	0.13	0.41	1039	520	1650	295	28.34%

Table 23: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 8 on 19 November 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	0.44	0.25	0.71	1759	981	2819	490	27.82%
Little gull	0	0	0.01	16	0	45	15	93.92%
Common gull	0.09	0.03	0.16	373	137	631	124	33.19%
Great black-backed gull	0.06	0.02	0.12	252	78	460	102	40.47%
Herring gull	0.36	0.05	0.76	1443	205	3039	726	50.32%
Little auk	0.02	0	0.04	66	8	147	37	55.76%
Guillemot	1.39	0.95	2.03	5534	3797	8079	1071	19.34%
Razorbill	0.32	0.07	0.67	1289	263	2652	629	48.76%
Puffin	0.02	0	0.03	70	16	137	32	45.49%
Red-throated diver	0	0	0.01	8	0	25	8	96.38%
Fulmar	0.13	0.09	0.18	528	367	706	92	17.30%
Gannet	0.26	0.13	0.41	1030	507	1650	297	28.84%

Table 24: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 8 on 19 November 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	0.48	0.26	0.79	1903	1031	3128	558	29.31%
Black-headed gull	0	0	0	1	0	1	1	54.38%
Little gull	0	0	0.01	17	1	52	15	88.51%
Common gull	0.13	0.05	0.22	507	204	881	169	33.23%
Great black-backed gull	0.07	0.02	0.12	264	87	487	106	39.95%
Herring gull	0.42	0.09	0.87	1685	350	3464	840	49.85%
Lesser black-backed gull	0	0	0	1	0	1	1	52.79%
Little auk	0.03	0.01	0.05	109	42	204	44	40.64%
Guillemot	1.64	1.1	2.3	6511	4385	9131	1201	18.45%
Razorbill	0.39	0.11	0.75	1543	446	2996	653	42.29%
Puffin	0.05	0.02	0.08	190	98	306	53	27.48%
Red-throated diver	0	0	0.01	8	0	25	8	98.22%
Fulmar	0.15	0.11	0.2	605	420	809	102	16.83%
Gannet	0.26	0.14	0.41	1043	550	1614	276	26.43%

Table 25: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 9 on 07 December 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	4.64	2.77	7.02	18449	11003	27937	4246	23.01%
Species								
Small gull species	0.6	0.3	1.05	2397	1186	4190	740	30.85%
Black-backed gull species	0.01	0	0.02	38	0	96	25	64.99%
Large gull species	0.18	0.02	0.43	706	74	1711	450	63.66%
Gull species	0.03	0.01	0.08	131	21	329	85	64.87%
Large auk	3.4	1.97	5.13	13543	7835	20387	3249	23.98%
Small auk	0	0	0.01	8	0	24	8	106.15%
Auk species	0.23	0.14	0.33	919	565	1312	198	21.46%
Auk / small gull	0.02	0.01	0.04	76	23	146	34	43.86%
Large auk / diver species	0	0	0.01	9	0	30	8	96.92%
Fulmar / gull species	0.14	0.1	0.19	558	385	738	95	16.97%
Gannet species	0.03	0	0.07	102	7	291	78	76.47%
Small bird species	0	0	0.01	8	0	23	7	94.41%

Table 26: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 9 on 07 December 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	0.52	0.26	0.86	2080	1025	3428	649	31.18%
Common gull	0.07	0.02	0.14	291	74	577	135	46.17%
Great black-backed gull	0.02	0	0.03	63	15	123	31	48.43%
Herring gull	0.16	0.01	0.41	643	46	1628	453	70.43%
Little auk	0	0	0.01	15	0	38	11	70.17%
Guillemot	2.58	1.52	3.97	10264	6065	15770	2524	24.59%
Razorbill	0.56	0.29	0.88	2242	1154	3512	636	28.36%
Fulmar	0.13	0.09	0.17	507	358	682	86	16.80%
Gannet	0.03	0	0.08	105	8	306	80	76.43%

Table 27: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 9 on 07 December 2019

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	0.54	0.26	0.91	2140	1025	3621	705	32.95%
Black-headed gull	0	0	0	6	0	15	5	72.75%
Common gull	0.08	0.02	0.16	299	97	624	136	45.21%
Great black-backed gull	0.02	0	0.03	62	9	133	31	50.18%
Herring gull	0.16	0.01	0.42	645	52	1672	460	71.26%
Little auk	0.02	0.01	0.03	78	41	120	22	27.43%
Guillemot	2.79	1.57	4.17	11090	6263	16580	2534	22.85%
Razorbill	0.78	0.43	1.18	3098	1720	4688	777	25.08%
Fulmar	0.14	0.1	0.19	557	396	738	91	16.32%
Gannet	0.03	0	0.07	102	8	275	77	75.96%

Table 28: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 10 on 05 February 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	13.52	10.16	17.17	53763	40395	68297	7061	13.13%
Species								
Duck species	0	0	0.01	8	0	26	8	98.48%
Small gull species	2.1	1.42	2.82	8335	5661	11231	1438	17.25%
Large gull species	0.01	0	0.02	41	8	82	20	47.96%
Gull species	0.02	0	0.05	93	8	206	52	56.21%
Large auk	10.4	7.72	13.45	41359	30713	53498	5912	14.29%
Small auk	0.04	0.01	0.08	155	25	322	82	52.33%
Auk species	0.77	0.52	1.03	3051	2057	4105	520	17.03%
Auk / small gull	0.02	0.01	0.04	93	37	163	33	35.59%
Large auk / diver species	0	0	0.01	9	0	25	8	95.32%
Diver species	0	0	0.01	17	0	42	11	64.34%
Fulmar / gull species	0.14	0.1	0.18	545	389	718	87	15.92%
Gannet species	0.01	0	0.02	33	8	71	17	50.81%
Small bird species	0.01	0.01	0.03	59	23	109	24	39.62%

Table 29: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 10 on 05 February 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Common scoter	0	0	0.01	9	0	27	9	94.56%
Kittiwake	2.09	1.34	2.92	8322	5336	11612	1541	18.52%
Little gull	0	0	0.01	17	0	48	15	87.76%
Common gull	0.01	0	0.02	51	16	94	22	42.97%
Herring gull	0.01	0	0.02	41	8	85	21	49.95%
Little auk	0.03	0.01	0.06	135	59	231	43	31.81%
Guillemot	8.6	6.6	10.79	34194	26257	42930	4554	13.32%
Razorbill	0.95	0.64	1.29	3784	2564	5144	684	18.07%
Puffin	0.01	0	0.03	58	16	105	25	43.10%
Fulmar	0.12	0.09	0.16	494	344	634	75	15.15%
Gannet	0.01	0	0.02	35	8	72	18	50.23%

Table 30: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 10 on 05 February 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Common scoter	0	0	0.01	9	0	28	9	98.41%
Kittiwake	2.08	1.39	2.95	8270	5538	11718	1540	18.62%
Little gull	0	0	0.01	18	1	48	15	85.30%
Common gull	0.01	0	0.02	49	11	96	22	43.57%
Herring gull	0.02	0	0.04	63	13	145	35	55.28%
Little auk	0.08	0.05	0.13	322	180	508	84	26.05%
Guillemot	9.74	7.27	12.61	38754	28927	50159	5460	14.09%
Razorbill	1.36	0.95	1.82	5402	3770	7225	917	16.97%
Puffin	0.04	0.02	0.06	161	88	257	44	27.07%
Fulmar	0.14	0.1	0.18	539	392	703	83	15.41%
Gannet	0.01	0	0.02	34	0	72	18	52.70%

Table 31: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 11 on 19 February 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	7.83	6.65	9.24	31145	26456	36762	2749	8.82%
Species								
Small gull species	1.34	1.01	1.76	5327	4000	7014	805	15.11%
Large gull species	0.01	0	0.02	41	8	72	16	39.66%
Gull species	0.01	0	0.01	24	0	55	14	56.09%
Large auk	5.97	4.81	7.3	23762	19129	29027	2572	10.82%
Small auk	0.02	0.01	0.05	95	32	182	39	40.06%
Auk species	0.3	0.23	0.37	1189	932	1464	136	11.41%
Auk / small gull	0.16	0.09	0.27	649	341	1086	200	30.78%
Large auk / diver species	0.01	0	0.01	24	0	55	14	55.07%
Diver species	0	0	0.01	8	0	24	8	100.88%
Fulmar / gull species	0.05	0.03	0.08	202	120	303	47	22.93%
Gannet species	0	0	0.01	17	0	40	12	68.85%
Small bird species	0.01	0	0.01	24	0	48	13	54.94%

Table 32: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 11 on 19 February 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	1.31	0.97	1.77	5227	3860	7048	837	16.01%
Little gull	0.01	0	0.02	26	0	67	18	67.37%
Common gull	0.03	0.01	0.05	118	55	206	39	32.91%
Great black-backed gull	0	0	0.01	17	0	40	11	68.32%
Herring gull	0.01	0	0.01	25	0	55	14	56.76%
Little auk	0.03	0.01	0.05	113	32	210	45	39.74%
Guillemot	4.86	3.91	5.94	19321	15562	23622	2087	10.80%
Razorbill	0.58	0.42	0.75	2308	1672	2991	337	14.58%
Puffin	0.04	0.02	0.06	168	95	255	41	24.01%
Red-throated diver	0	0	0.01	8	0	24	8	95.37%
Fulmar	0.04	0.02	0.06	167	91	247	41	24.57%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Gannet	0	0	0.01	17	0	40	11	61.96%

Table 33: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 11 on 19 February 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	1.46	1.1	1.92	5807	4356	7627	849	14.62%
Little gull	0.01	0	0.02	25	0	64	18	69.56%
Common gull	0.03	0.01	0.05	125	55	216	41	32.25%
Great black-backed gull	0	0	0.01	17	0	40	11	67.15%
Herring gull	0.01	0	0.02	35	10	71	15	42.77%
Little auk	0.08	0.06	0.11	331	235	442	56	16.71%
Guillemot	5.38	4.36	6.46	21387	17356	25679	2197	10.27%
Razorbill	0.65	0.49	0.83	2592	1957	3309	339	13.08%
Puffin	0.17	0.13	0.22	688	521	874	88	12.74%
Red-throated diver	0	0	0.01	8	0	24	8	97.82%
Fulmar	0.05	0.03	0.07	201	104	293	47	23.25%
Gannet	0	0	0.01	18	0	40	12	67.32%

Table 34: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 12 on 21 March 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	27.41	21.55	32.78	109007	85723	130383	11446	10.50%
Species								
Small gull species	5.32	3.6	7.16	21154	14317	28489	3832	18.11%
Large gull species	0	0	0.01	17	0	41	11	64.04%
Gull species	0.01	0	0.03	50	0	111	30	60.04%
Skua species	0	0	0.01	9	0	25	9	94.60%
Large auk	20.87	16.26	25.65	82990	64662	102024	10007	12.06%
Small auk	0.19	0.11	0.29	774	418	1163	196	25.23%
Auk species	0.61	0.46	0.8	2421	1821	3167	338	13.95%
Auk / small gull	0.02	0.01	0.04	83	25	164	37	44%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Large auk / diver species	0	0	0.01	10	0	25	9	92.81%
Fulmar / gull species	0.1	0.06	0.14	383	237	540	83	21.63%
Gannet species	0.2	0.14	0.27	788	565	1060	129	16.36%

Table 35: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 12 on 21 March 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	5.35	3.72	7.43	21272	14776	29570	3823	17.97%
Common gull	0	0	0.01	9	0	25	9	98.17%
Great black-backed gull	0	0	0.01	9	0	25	9	99.97%
Herring gull	0	0	0.01	9	0	25	9	97.10%
Great skua	0	0	0.01	8	0	25	8	99.28%
Guillemot	16.22	12.53	20	64525	49827	79544	7555	11.71%
Razorbill	3.11	2.23	3.98	12386	8854	15844	1741	14.05%
Puffin	0.39	0.24	0.55	1562	960	2199	318	20.33%
Fulmar	0.08	0.05	0.12	321	199	462	71	21.96%
Gannet	0.2	0.13	0.27	788	535	1067	131	16.53%

Table 36: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 12 on 21 March 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	5.36	3.58	7.5	21334	14228	29836	4021	18.85%
Common gull	0	0	0.01	9	1	26	9	104.14%
Great black-backed gull	0	0	0.01	9	0	25	8	94.51%
Herring gull	0	0	0.01	9	0	25	9	95.52%
Great skua	0	0	0.01	8	0	25	8	100.34%
Guillemot	17.56	13.9	21.42	69853	55296	85203	7936	11.36%
Razorbill	3.4	2.55	4.33	13532	10151	17230	1878	13.88%
Puffin	0.63	0.47	0.85	2516	1853	3375	402	15.94%
Fulmar	0.1	0.06	0.14	379	243	540	81	21.29%
Gannet	0.2	0.14	0.26	781	554	1024	123	15.66%

Table 37: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 13 on 05 May 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	29.28	24.16	33.63	116440	96082	133749	9464	8.13%
Species								
Small gull species	2.59	1.65	3.66	10287	6560	14567	2055	19.98%
Large gull species	0.01	0	0.02	30	0	68	18	58.24%
Gull species	0.08	0.01	0.19	305	23	762	222	72.71%
Arctic / common tern	0.01	0.01	0.02	57	21	100	22	37.80%
Large auk	24.23	19.92	28.42	96388	79222	113038	8608	8.93%
Small auk	0.06	0.03	0.1	252	127	389	68	26.81%
Auk species	1.41	1.02	1.81	5589	4045	7180	775	13.86%
Auk / small gull	0.15	0.05	0.25	581	190	998	215	36.96%
Fulmar / gull species	0.09	0.05	0.15	365	196	590	101	27.71%
Gannet species	0.59	0.46	0.74	2362	1846	2933	287	12.12%
Passerine species	0	0	0.01	8	0	23	7	95.21%

Table 38: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 13 on 05 May 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	2.67	1.71	3.78	10623	6807	15045	2137	20.11%
Herring gull	0	0	0.01	8	0	23	8	101.56%
Lesser black-backed gull	0.01	0	0.02	22	0	76	22	99.61%
Common tern	0	0	0.01	8	0	22	7	98.49%
Arctic tern	0	0	0.01	8	0	22	7	90.98%
Guillemot	22.48	18.36	26.41	89407	73006	105044	8233	9.21%
Razorbill	0.92	0.69	1.18	3673	2732	4696	521	14.18%
Puffin	0.76	0.52	1.05	3026	2071	4180	533	17.61%
Fulmar	0.05	0.02	0.07	180	93	290	50	27.41%
Gannet	0.6	0.46	0.75	2380	1849	2991	291	12.20%
Redstart	0	0	0.01	8	0	27	8	99.26%

Table 39: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 13 on 05 May 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	2.87	1.57	4.27	11416	6259	16984	2657	23.27%
Herring gull	0	0	0.01	14	0	36	10	70.53%
Lesser black-backed gull	0.01	0	0.02	23	0	67	21	94.37%
Common tern	0	0	0.01	19	5	36	9	43.18%
Arctic tern	0.01	0	0.02	31	5	60	16	49.16%
Guillemot	23.14	19.02	26.98	92053	75632	107304	8578	9.32%
Razorbill	0.98	0.71	1.24	3896	2812	4920	551	14.14%
Puffin	1.42	1.02	1.81	5646	4048	7183	796	14.09%
Fulmar	0.06	0.03	0.09	243	139	361	57	23.50%
Gannet	0.6	0.48	0.76	2387	1928	3042	282	11.80%
Redstart	0	0	0.01	8	0	22	7	91.29%

Table 40: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 14 on 16 May 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	26.85	22.2	31.59	106790	88292	125639	8914	8.35%
Species group								
Wader species	0.03	0	0.08	112	0	334	110	97.71%
Small gull species	5.72	4.63	6.79	22736	18409	26998	2080	9.15%
Large gull species	0	0	0.01	8	0	24	8	100.77%
Gull species	0.01	0	0.02	34	0	87	25	72.32%
Arctic / common tern	0.17	0.07	0.31	662	287	1237	262	39.61%
Tern species	0	0	0.01	9	0	28	9	99.58%
Tern / small gull species	0	0	0.01	16	0	40	11	66.70%
Large auk	18.94	15.35	22.68	75337	61044	90185	7353	9.76%
Small auk	0.08	0.05	0.11	299	188	440	69	23.01%
Auk species	0.59	0.46	0.73	2354	1834	2900	283	12.01%
Auk / small gull	0.08	0.05	0.11	318	210	432	58	18.07%
Diver species	0.01	0	0.02	31	0	79	20	63.25%
Fulmar / gull species	0.03	0.02	0.06	137	71	228	41	29.44%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Gannet species	1.11	0.88	1.34	4417	3481	5336	466	10.54%

Table 41: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 14 on 16 May 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	5.75	4.74	6.77	22876	18853	26924	2102	9.19%
Common gull	0	0	0.01	9	0	24	9	100.33%
Herring gull	0	0	0.01	8	0	24	8	96.19%
Common tern	0	0	0.01	9	0	24	8	90.67%
Arctic tern	0.02	0	0.04	64	8	145	36	55.44%
Guillemot	17.75	14.53	21.28	70583	57777	84638	7364	10.43%
Razorbill	0.66	0.43	0.9	2613	1728	3590	488	18.66%
Puffin	0.27	0.21	0.33	1076	839	1324	129	11.91%
Red-throated diver	0.01	0	0.02	33	0	79	20	60.90%
Fulmar	0.03	0.02	0.05	131	63	210	38	28.42%
Gannet	1.1	0.89	1.31	4380	3552	5218	427	9.74%

Table 42: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 14 on 16 May 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	5.76	4.81	6.83	22928	19141	27153	2066	9.01%
Common gull	0	0	0.01	8	0	24	8	100.92%
Herring gull	0	0	0.01	8	0	24	8	101.09%
Common tern	0.01	0	0.01	31	17	53	10	31.88%
Arctic tern	0.08	0.05	0.12	320	194	466	71	22.18%
Guillemot	18.33	14.82	21.68	72896	58936	86211	7281	9.99%
Razorbill	0.74	0.51	0.96	2929	2041	3810	475	16.21%
Puffin	0.55	0.45	0.66	2179	1788	2638	230	10.54%
Red-throated diver	0.01	0	0.02	34	0	80	20	59.03%
Fulmar	0.03	0.02	0.06	138	64	225	40	28.80%
Gannet	1.1	0.89	1.34	4382	3530	5317	465	10.60%

Table 43: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 15 on 09 June 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	29.5	25.71	33.38	117346	102240	132775	7546	6.43%
Species								
Small gull species	5.03	4.26	5.8	20000	16933	23080	1566	7.83%
Black-backed gull species	0.01	0	0.02	32	0	73	20	61.66%
Large gull species	0.06	0.01	0.11	226	49	453	109	48.01%
Gull species	0	0	0.01	8	0	25	9	100.56%
Arctic / common tern	0.02	0.01	0.03	66	24	120	28	41.40%
Tern / small gull species	0	0	0.01	9	0	25	8	96.23%
Skua species	0	0	0.01	8	0	25	8	101.57%
Large auk	21.97	18.88	25	87364	75087	99447	6204	7.10%
Small auk	0.02	0.01	0.03	74	24	136	29	39.26%
Auk species	0.89	0.7	1.1	3528	2793	4364	416	11.77%
Auk / small gull	0.04	0.02	0.06	156	75	247	45	28.74%
Large auk / diver species	0	0	0.01	9	0	25	8	95.64%
Auk / shearwater species	0.03	0.01	0.06	125	47	238	48	38.44%
Fulmar / gull species	0.07	0.05	0.1	291	191	414	57	19.50%
Shearwater species	0.01	0	0.01	25	0	48	13	49.49%
Gannet species	1.33	1.06	1.68	5283	4231	6667	618	11.69%

Table 44: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 15 on 09 June 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	5.04	4.27	5.8	20047	16989	23051	1575	7.85%
Great black-backed gull	0	0	0.01	9	0	24	8	95.28%
Herring gull	0.05	0.01	0.1	195	47	410	92	47.06%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Lesser black-backed gull	0.01	0	0.03	49	8	104	27	54.19%
Arctic tern	0.01	0	0.02	47	16	91	21	44.20%
Great skua	0	0	0.01	9	0	24	8	94.86%
Guillemot	20.99	17.97	24.07	83464	71485	95746	6132	7.35%
Razorbill	0.58	0.45	0.72	2320	1809	2849	263	11.33%
Puffin	0.45	0.32	0.61	1803	1272	2414	284	15.72%
Fulmar	0.07	0.05	0.09	273	183	364	47	16.94%
Manx shearwater	0.01	0.01	0.02	56	24	95	19	32.33%
Gannet	1.33	1.05	1.69	5272	4174	6708	644	12.22%

Table 45: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 15 on 09 June 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	5.07	4.32	5.74	20178	17191	22825	1485	7.36%
Great black-backed gull	0	0	0.01	9	0	24	8	94.44%
Herring gull	0.05	0.01	0.1	200	56	398	90	44.86%
Lesser black-backed gull	0.01	0	0.03	48	8	110	28	57.33%
Arctic tern	0.02	0	0.03	64	16	124	27	41.83%
Great skua	0	0	0.01	8	0	25	8	102.74%
Guillemot	21.46	18.67	24.63	85344	74257	97974	6355	7.45%
Razorbill	0.63	0.5	0.8	2510	2007	3163	289	11.48%
Puffin	0.75	0.56	0.93	2983	2243	3709	373	12.48%
Fulmar	0.07	0.05	0.1	290	185	415	58	19.81%
Manx shearwater	0.04	0.02	0.07	153	63	268	52	33.88%
Gannet	1.32	1.09	1.64	5266	4326	6508	593	11.25%

Table 46: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 16 on 12 July 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	21.79	19.13	25.09	86657	76091	99804	6241	7.20%
Species								
Small gull species	6.29	5.04	7.67	25030	20041	30504	2658	10.62%
Black-backed gull species	0.07	0.04	0.09	266	171	357	48	18.05%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Large gull species	1.12	0.75	1.55	4471	2977	6177	839	18.76%
Gull species	0.19	0.09	0.32	769	377	1270	234	30.32%
Arctic / common tern	0.08	0.04	0.13	336	178	523	90	26.60%
Large auk	9.05	7.41	10.74	35988	29490	42710	3472	9.65%
Small auk	0.52	0.27	0.88	2056	1071	3497	618	30.04%
Auk species	1.12	0.87	1.41	4471	3460	5597	563	12.58%
Auk / small gull	0.04	0.02	0.06	150	80	224	38	25.31%
Auk / shearwater species	0.03	0	0.08	119	0	304	80	66.95%
Fulmar / gull species	0.08	0.05	0.12	318	201	458	66	20.78%
Shearwater species	0	0	0.01	8	0	24	8	95.87%
Gannet species	3.27	2.86	3.67	13009	11379	14592	852	6.54%
Small bird species	0	0	0.01	8	0	24	8	98.39%

Table 47: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 16 on 12 July 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	6.31	5.01	7.6	25101	19924	30245	2636	10.50%
Little gull	0.01	0	0.02	31	0	91	26	81.05%
Common gull	0.01	0	0.01	24	0	48	13	54.36%
Great black-backed gull	0.02	0.01	0.04	75	24	143	31	40.46%
Herring gull	1.1	0.69	1.5	4364	2763	5984	840	19.25%
Lesser black-backed gull	0.22	0.16	0.28	875	638	1111	120	13.64%
Common tern	0.01	0	0.04	55	0	157	47	86.61%
Arctic tern	0.02	0.01	0.04	90	24	167	40	44.51%
Guillemot	7.26	5.92	8.71	28862	23543	34652	2866	9.93%
Razorbill	1.41	0.97	1.86	5621	3840	7385	898	15.96%
Puffin	1.04	0.71	1.46	4138	2836	5825	792	19.13%
Fulmar	0.05	0.03	0.07	185	112	265	41	21.87%
Manx shearwater	0.01	0	0.03	40	0	110	32	80.93%
Gannet	3.24	2.85	3.68	12901	11318	14644	843	6.53%

Table 48: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 16 on 12 July 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	6.3	5.03	7.63	25057	19988	30351	2648	10.57%
Little gull	0.01	0	0.02	33	1	99	27	81.02%
Common gull	0.01	0	0.01	24	1	52	13	53.61%
Great black-backed gull	0.02	0.01	0.03	74	27	129	29	38.75%
Herring gull	1.18	0.79	1.65	4675	3147	6553	862	18.43%
Lesser black-backed gull	0.23	0.17	0.29	901	675	1141	119	13.11%
Common tern	0.03	0.01	0.06	119	42	221	51	42.47%
Arctic tern	0.05	0.03	0.09	216	110	357	64	29.20%
Guillemot	7.87	6.62	9.3	31309	26340	36995	2854	9.12%
Razorbill	1.56	1.11	2.01	6185	4406	8008	933	15.08%
Puffin	1.32	0.93	1.79	5235	3705	7138	883	16.86%
Fulmar	0.05	0.03	0.07	199	123	281	41	20.56%
Manx shearwater	0.01	0	0.03	43	0	117	34	80.07%
Gannet	3.27	2.88	3.68	13018	11455	14647	804	6.17%

Table 49: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 17 on 09 August 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	43.24	37.15	49.16	171967	147746	195523	12692	7.38%
Species								
Wader species	0	0	0.01	9	0	24	9	95.14%
Small gull species	9.37	7.54	11.34	37257	29987	45083	3864	10.37%
Black-backed gull species	0.02	0.01	0.04	88	32	159	33	37.36%
Large gull species	0.19	0.1	0.31	765	389	1218	212	27.70%
Gull species	0.05	0.03	0.08	200	106	332	57	28.47%
Arctic / common tern	1.9	1.22	2.68	7567	4843	10673	1488	19.67%
Tern species	0.05	0.02	0.09	185	72	346	68	36.40%
Tern / small gull species	0.07	0.04	0.1	263	140	392	66	24.97%
Skua species	0	0	0.01	17	0	40	11	63.96%
Large auk	26.94	23.06	30.85	107142	91730	122697	8055	7.52%
Small auk	0.39	0.25	0.55	1553	979	2206	332	21.35%
Auk species	2.16	1.71	2.66	8611	6806	10571	1001	11.62%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Auk / small gull	0.06	0.03	0.09	225	124	343	55	24.32%
Auk / shearwater species	0.09	0	0.23	360	16	932	256	70.99%
Diver species	0	0	0.01	8	0	24	8	101.21%
Fulmar / gull species	0.11	0.07	0.15	425	264	596	85	19.96%
Gannet species	1.83	1.48	2.19	7270	5878	8707	753	10.35%

Table 50: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 17 on 09 August 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Oyster-catcher	0	0	0.01	9	0	24	8	94.96%
Kittiwake	9.24	7.41	11.33	36743	29488	45071	4045	11.01%
Little gull	0.06	0.03	0.11	255	112	449	85	33.19%
Common gull	0.04	0.03	0.06	176	104	254	38	21.20%
Great black-backed gull	0	0	0.01	17	0	40	12	68.65%
Herring gull	0.16	0.07	0.26	640	273	1052	203	31.68%
Lesser black-backed gull	0.06	0.03	0.11	246	103	458	91	36.87%
Sandwich tern	0	0	0.01	8	0	24	8	101.28%
Common tern	0.07	0.02	0.13	272	80	529	117	42.93%
Arctic tern	0.05	0.01	0.11	184	40	425	111	60.27%
Great skua	0	0	0.01	17	0	40	11	64.79%
Guillemot	23.79	20.24	27.94	94631	80517	111134	7715	8.15%
Razorbill	2.41	1.79	3.12	9594	7135	12416	1349	14.06%
Puffin	1.26	1	1.52	4996	3997	6029	523	10.47%
Fulmar	0.09	0.06	0.12	354	229	487	64	17.95%
Manx shearwater	0.02	0	0.06	68	0	221	62	90.65%
Gannet	1.83	1.48	2.22	7296	5898	8844	750	10.27%

Table 51: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 17 on 09 August 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Oyster-catcher	0	0	0.01	9	0	24	8	96.08%
Kittiwake	9.34	7.53	11.26	37148	29930	44771	3948	10.63%
Little gull	0.11	0.06	0.16	420	242	629	100	23.72%
Common gull	0.05	0.03	0.07	180	112	261	39	21.32%
Great black-backed gull	0	0	0.01	17	1	40	12	69.49%
Herring gull	0.18	0.09	0.29	733	362	1168	212	28.86%
Lesser black-backed gull	0.07	0.03	0.12	267	116	489	95	35.34%
Sandwich tern	0.01	0	0.03	58	19	112	23	39.13%
Common tern	1.49	1.02	2.02	5930	4038	8039	1108	18.69%
Arctic tern	0.44	0.29	0.63	1733	1137	2507	357	20.55%
Great skua	0	0	0.01	16	0	39	11	63.83%
Guillemot	24.99	20.99	28.88	99393	83472	114869	8333	8.38%
Razorbill	2.58	1.96	3.18	10250	7814	12652	1260	12.29%
Puffin	1.87	1.49	2.28	7441	5914	9077	830	11.15%
Fulmar	0.1	0.07	0.14	395	267	554	73	18.40%
Manx shearwater	0.02	0	0.05	68	0	191	64	94.13%
Gannet	1.82	1.48	2.22	7259	5876	8835	761	10.48%

Table 52: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 18 on 06 September 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	71.71	56.2	86.07	285204	223512	342307	30426	10.67%
Wader species								
Wader species	0	0	0.01	9	0	24	9	100.24%
Small gull species								
Small gull species	13.71	10.57	17.5	54526	42034	69619	7393	13.56%
Large gull species								
Large gull species	0.05	0.02	0.08	199	76	332	67	33.41%
Gull species								
Gull species	0.05	0.02	0.09	209	91	343	62	29.73%
Arctic / common tern								
Arctic / common tern	0.32	0.13	0.57	1286	537	2275	432	33.53%
Tern species								
Tern species	0.03	0	0.05	100	20	190	45	44.84%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Tern / small gull species	0.02	0	0.05	82	16	180	47	57.62%
Skua species	0.01	0	0.02	32	8	64	15	46.74%
Skua species excluding great	0	0	0.01	9	0	24	8	90.94%
Large auk	45.69	35.11	57.98	181735	139648	230583	23062	12.69%
Small auk	1.29	0.9	1.72	5113	3570	6855	869	16.98%
Auk species	7.8	6.23	9.54	31024	24787	37960	3291	10.61%
Auk / small gull	0.22	0.15	0.29	867	612	1138	133	15.24%
Large auk / diver species	0	0	0.01	8	0	24	8	101.90%
Auk / shearwater species	0.05	0	0.12	198	20	488	119	60.16%
Storm-petrel species	0.01	0	0.02	35	0	96	31	88.58%
Fulmar / gull species	0.77	0.66	0.9	3081	2626	3567	232	7.50%
Shearwater species	0	0	0.01	16	0	40	11	64.43%
Gannet species	1.84	1.53	2.14	7302	6070	8527	616	8.44%
Passerine species	0	0	0.01	17	0	48	16	93.50%
Small bird species	0	0	0.01	9	0	24	8	94.12%

Table 53: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 18 on 06 September 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Curlew	0	0	0.01	9	0	24	8	91.94%
Kittiwake	13.89	10.39	17.53	55261	41312	69728	7317	13.24%
Black-headed gull	0	0	0.01	9	0	24	8	98.71%
Little gull	0.01	0	0.02	41	0	96	26	62.05%
Common gull	0.01	0	0.01	25	0	55	14	54.91%
Herring gull	0.06	0.03	0.09	220	110	348	64	28.77%
Common tern	0.05	0.01	0.09	180	59	351	75	41.24%
Arctic tern	0.02	0	0.05	96	8	207	51	53.28%
Great skua	0.01	0	0.01	24	0	55	13	54.02%
Arctic skua	0	0	0.01	9	0	32	9	96.80%
Guillemot	34.18	26.37	42.82	135956	104879	170306	16704	12.29%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Razorbill	10.9	7.31	14.57	43364	29069	57936	7292	16.81%
Puffin	6.63	5.51	7.77	26355	21927	30889	2245	8.52%
European Storm-Petrel	0.01	0	0.04	47	0	144	48	102.37%
Fulmar	0.68	0.58	0.79	2720	2289	3161	220	8.09%
Sooty shearwater	0	0	0.01	17	0	40	12	70.95%
Gannet	1.84	1.57	2.11	7301	6228	8391	585	8.01%

Table 54: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 18 on 06 September 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Curlew	0	0	0.01	9	0	24	8	97.63%
Kittiwake	13.86	10.53	18.06	55139	41872	71811	7069	12.82%
Black-headed gull	0	0	0.01	9	0	24	8	95.13%
Little gull	0.01	0	0.03	55	8	118	30	54.18%
Common gull	0.01	0	0.01	26	4	52	14	50.85%
Herring gull	0.06	0.03	0.09	243	127	367	64	26.33%
Lesser black-backed gull	0	0	0	1	0	2	1	95.60%
Sandwich tern	0	0	0	1	0	2	1	63.59%
Little tern	0	0	0	1	0	2	1	66.14%
Common tern	0.22	0.08	0.42	895	327	1663	351	39.23%
Arctic tern	0.07	0.02	0.11	262	89	457	102	38.68%
Great skua	0.01	0	0.02	33	8	63	15	44.12%
Arctic skua	0	0	0.01	8	0	24	8	98.32%
Guillemot	36.04	27.11	45.82	143334	107813	182232	19048	13.29%
Razorbill	11.41	7.77	15.43	45374	30896	61366	7922	17.46%
Puffin	7.56	6.42	8.74	30065	25543	34768	2467	8.20%
European Storm-Petrel	0.01	0	0.04	50	0	167	50	99.33%
Fulmar	0.77	0.65	0.88	3050	2602	3499	232	7.60%
Sooty shearwater	0	0	0.01	17	0	40	12	68.48%
Manx shearwater	0.01	0	0.02	26	2	63	16	61.55%
Gannet	1.83	1.54	2.15	7279	6143	8558	624	8.57%

Table 55: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 19 on 16 October 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	12.51	8.51	17.38	49757	33853	69140	9230	18.55%
Small gull species								
Small gull species	1.69	1.06	2.55	6742	4229	10160	1495	22.17%
Large gull species								
Large gull species	0	0	0.01	16	0	40	11	68.85%
Gull species	0.01	0	0.03	50	0	131	34	68.50%
Skua species	0.01	0	0.02	40	8	80	20	50.68%
Large auk								
Large auk	8.85	5.31	13.25	35215	21108	52699	8164	23.18%
Small auk								
Small auk	0.01	0	0.03	41	0	104	30	73.87%
Auk species								
Auk species	0.7	0.49	0.94	2774	1963	3758	450	16.20%
Auk / small gull								
Auk / small gull	0.02	0.01	0.04	95	40	167	32	32.94%
Diver species								
Diver species	0	0	0.01	9	0	24	8	94.29%
Fulmar / gull species								
Fulmar / gull species	0.25	0.18	0.34	1011	720	1353	161	15.86%
Shearwater species								
Shearwater species	0	0	0.01	16	0	48	15	93.47%
Gannet species								
Gannet species	0.83	0.66	1.06	3313	2628	4203	414	12.48%

Table 56: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 19 on 16 October 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	1.72	1.13	2.5	6859	4499	9963	1437	20.95%
Little gull	0	0	0.01	9	0	24	8	92.97%
Herring gull	0.01	0	0.01	26	4	48	13	48.56%
Great skua	0.01	0	0.02	40	8	87	21	50.53%
Guillemot	7.85	4.77	10.99	31241	18960	43720	6552	20.97%
Razorbill	0.92	0.53	1.36	3667	2103	5416	840	22.89%
Puffin	0.08	0.06	0.12	336	224	462	62	18.39%
Fulmar	0.24	0.17	0.33	974	662	1299	157	16.03%
Gannet	0.84	0.66	1.06	3328	2622	4231	434	13.02%

Table 57: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 19 on 16 October 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	1.75	1.12	2.53	6967	4450	10049	1439	20.65%
Little gull	0	0	0.01	8	1	24	8	95.91%
Common gull	0	0	0	1	0	1	1	59.98%
Herring gull	0.01	0	0.01	25	1	50	13	52.02%
Great skua	0.01	0	0.02	40	8	83	20	48.83%
Guillemot	8.24	5.13	12.02	32754	20400	47810	7337	22.40%
Razorbill	1.21	0.77	1.67	4807	3074	6642	947	19.69%
Puffin	0.17	0.12	0.23	693	492	931	110	15.78%
Red-throated diver								
Red-throated diver	0	0	0.01	9	0	24	8	93.81%
Fulmar	0.26	0.18	0.33	1019	728	1323	158	15.50%
Gannet	0.84	0.66	1.08	3353	2611	4288	447	13.32%

Table 58: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 20 on 05 November 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	11.56	8.72	14.55	45991	34681	57856	5840	12.70%
Duck species								
Duck species	0	0	0.01	8	0	24	8	101.58%
Wader species								
Wader species	0.01	0	0.03	41	0	102	26	62.27%
Small gull species								
Small gull species	3.54	2.68	4.32	14096	10647	17163	1667	11.82%
Black-backed gull species								
Black-backed gull species	0	0	0.01	16	0	40	12	69.81%
Large gull species								
Large gull species	0.02	0.01	0.03	71	24	124	26	35.63%
Gull species								
Gull species	0.02	0	0.04	69	8	176	43	62.56%
Skua species								
Skua species	0.02	0.01	0.03	73	32	124	24	32.02%
Skua species excluding great								
Skua species excluding great	0	0	0.01	16	0	40	12	70.47%
Large auk								
Large auk	6.01	3.85	8.32	23907	15302	33099	4724	19.76%
Small auk								
Small auk	0.01	0.01	0.03	57	24	102	21	37%
Auk species								
Auk species	0.56	0.4	0.73	2228	1602	2910	341	15.29%
Auk / small gull								
Auk / small gull	0.07	0.04	0.1	265	142	414	72	27.12%
Large auk / diver species								
Large auk / diver species	0.04	0.01	0.08	170	48	313	72	42.47%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Diver species	0.02	0	0.04	71	20	143	33	46.10%
Gannet species	1.11	0.85	1.4	4417	3369	5578	552	12.49%
Passerine species	0.01	0	0.02	23	0	72	23	104.20%
Small bird species	0.01	0	0.01	25	0	54	13	53.05%

Table 59: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 20 on 05 November 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Goosander	0	0	0.01	8	0	24	8	99.38%
Woodcock	0	0	0.01	16	0	40	11	66.21%
Kittiwake	3.55	2.68	4.42	14108	10647	17569	1731	12.26%
Common gull	0.01	0	0.01	24	0	56	13	53.92%
Great black-backed gull	0.01	0	0.02	40	12	78	17	40.91%
Herring gull	0.02	0	0.05	86	20	182	43	49.74%
Great skua	0.01	0.01	0.02	57	24	88	18	30.80%
Pomarine skua	0	0	0.01	8	0	24	8	96.67%
Arctic skua	0	0	0.01	8	0	24	8	100.08%
Little auk	0.03	0.01	0.05	119	48	192	37	30.90%
Guillemot	5.78	3.72	8.25	23003	14790	32804	4497	19.55%
Razorbill	0.3	0.2	0.41	1177	797	1640	226	19.16%
Puffin	0.11	0.06	0.16	420	240	628	98	23.24%
Red-throated diver	0.02	0	0.06	98	16	221	52	52.91%
Gannet	1.11	0.85	1.38	4421	3381	5502	561	12.67%

Table 60: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 20 on 05 November 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Goosander	0	0	0.01	9	0	24	9	99.76%
Golden plover	0	0	0.01	20	0	56	19	97.29%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Woodcock	0.01	0	0.01	23	0	49	13	55.44%
Kittiwake	3.61	2.7	4.44	14375	10739	17642	1738	12.08%
Common gull	0.01	0	0.01	25	0	55	14	53.44%
Great black-backed gull	0.01	0	0.02	40	8	72	17	41.85%
Herring gull	0.02	0	0.05	88	20	182	42	47.95%
Great skua	0.02	0.01	0.03	72	32	119	23	32.02%
Pomarine skua	0	0	0.01	9	0	32	9	101.95%
Arctic skua	0	0	0.01	9	0	32	9	99.33%
Little auk	0.05	0.03	0.07	180	114	260	39	21.62%
Guillemot	6.01	3.72	8.4	23920	14810	33413	4725	19.75%
Razorbill	0.41	0.29	0.55	1619	1154	2200	269	16.57%
Puffin	0.17	0.1	0.23	659	418	922	132	20%
Red-throated diver	0.05	0.02	0.09	200	72	375	79	39.22%
Gannet	1.11	0.84	1.41	4422	3359	5627	600	13.56%

Table 61: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 21 on 01 December 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	20.74	14.92	27.48	82493	59346	109304	12766	15.47%
Species								
Small gull species	2.55	1.27	4.54	10131	5035	18050	3418	33.73%
Black-backed gull species	0.02	0	0.03	62	8	124	29	46.37%
Large gull species	1.31	0.45	2.55	5229	1808	10159	2137	40.85%
Gull species	0.15	0.03	0.33	591	127	1325	347	58.65%
Skua species	0.01	0	0.02	33	8	68	17	50.29%
Large auk	15.15	11.27	18.83	60271	44842	74891	7711	12.79%
Small auk	0.05	0.02	0.09	213	94	354	71	33.04%
Auk species	0.88	0.61	1.16	3494	2408	4622	582	16.65%
Auk / small gull	0.06	0.02	0.1	223	84	393	84	37.71%
Diver species	0.01	0	0.02	32	0	71	18	57.07%
Fulmar / gull species	0.39	0.29	0.51	1552	1143	2015	223	14.33%
Gannet species	0.35	0.18	0.56	1394	732	2239	391	28.04%
Cormorant / shag	0	0	0.01	9	0	24	8	90.32%

Table 62: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 21 on 01 December 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	2.38	1.25	4.03	9477	4976	16015	3072	32.41%
Black-headed gull	0	0	0.01	8	0	24	8	101.19%
Little gull	0.01	0	0.02	42	8	80	20	46.21%
Common gull	0.23	0.06	0.5	933	234	1980	443	47.44%
Great black-backed gull	0.1	0.06	0.15	407	228	606	98	23.99%
Herring gull	1.25	0.38	2.17	4974	1519	8638	1882	37.84%
Lesser black-backed gull	0	0	0.01	8	0	24	8	95.72%
Great skua	0.01	0	0.02	32	8	64	17	51.07%
Little auk	0.15	0.09	0.21	579	347	845	136	23.37%
Guillemot	13.94	10.4	17.82	55441	41360	70889	7344	13.25%
Razorbill	0.96	0.6	1.34	3803	2372	5322	761	19.99%
Puffin	0.01	0.01	0.03	57	24	103	21	35.52%
Red-throated diver	0.01	0	0.02	33	0	78	19	58.34%
Fulmar	0.36	0.28	0.47	1444	1114	1881	190	13.15%
Gannet	0.36	0.18	0.58	1415	729	2300	400	28.23%
Shag	0	0	0.01	9	0	24	9	93.91%

Table 63: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 21 on 01 December 2020

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	2.42	1.2	4.31	9637	4784	17147	3195	33.15%
Black-headed gull	0	0	0.01	11	1	32	9	77.39%
Little gull	0.01	0	0.02	41	8	82	20	49.17%
Common gull	0.25	0.06	0.49	982	232	1934	458	46.63%
Great black-backed gull	0.1	0.06	0.15	409	240	603	98	23.80%
Herring gull	1.28	0.39	2.29	5078	1563	9123	1998	39.34%
Lesser black-backed gull	0	0	0.01	9	1	24	9	100.38%
Great skua	0.01	0	0.02	32	8	71	16	48.24%
Little auk	0.24	0.17	0.33	971	661	1322	167	17.17%
Guillemot	14.59	10.81	18.49	58018	42990	73540	7940	13.68%
Razorbill	1.35	0.93	1.79	5351	3698	7129	888	16.58%
Puffin	0.03	0.02	0.04	109	67	154	24	21.70%
Red-throated diver	0.01	0	0.02	33	0	71	18	55.87%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Fulmar	0.38	0.28	0.48	1502	1117	1913	201	13.34%
Gannet	0.34	0.18	0.53	1355	705	2093	360	26.53%
Shag	0	0	0.01	9	0	24	8	98.77%

Table 64: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 22 on 19 January 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	14.77	11.86	18.45	58741	47170	73377	6692	11.39%
Species								
Small gull species	4.27	2.06	6.84	16994	8195	27204	5117	30.11%
Black-backed gull species	0.01	0	0.04	59	8	145	36	61.70%
Large gull species	0.18	0.08	0.33	705	311	1310	270	38.18%
Gull species	0.02	0.01	0.03	89	48	131	22	24.25%
Large auk	9.21	7.96	10.61	36625	31661	42198	2684	7.33%
Small auk	0.02	0	0.03	63	16	120	29	44.77%
Auk species	0.93	0.75	1.11	3680	2989	4434	371	10.06%
Auk / small gull	0.07	0.01	0.17	288	59	670	161	55.83%
Large auk / diver species	0.01	0	0.01	26	0	55	13	51.29%
Diver species	0.01	0	0.02	34	0	88	23	69.46%
Fulmar / gull species	0.11	0.08	0.15	455	313	608	74	16.07%
Gannet species	0.09	0.06	0.13	353	226	524	78	22.08%

Table 65: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 22 on 19 January 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	4.26	2.04	7.22	16947	8117	28727	5331	31.45%
Little gull	0.01	0	0.02	25	0	72	24	95.07%
Common gull	0.05	0.03	0.07	185	118	261	38	20.57%
Great black-backed gull	0.06	0.03	0.09	221	107	374	70	31.34%
Herring gull	0.15	0.06	0.28	580	238	1126	236	40.61%
Little auk	0.09	0.05	0.13	356	210	521	78	21.92%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Guillemot	6.81	5.96	7.61	27068	23709	30261	1702	6.29%
Razorbill	1.94	1.43	2.47	7702	5694	9832	1060	13.76%
Puffin	0.02	0.01	0.03	65	24	112	24	36.58%
Red-throated diver	0.01	0	0.02	32	0	88	25	79.18%
Fulmar	0.11	0.07	0.15	432	290	582	75	17.35%
Gannet	0.09	0.06	0.13	352	230	511	73	20.69%

Table 66: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 22 on 19 January 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	4.33	2.11	7.32	17226	8407	29105	5392	31.30%
Little gull	0.01	0	0.02	26	1	72	24	92.41%
Common gull	0.05	0.03	0.07	188	112	264	37	19.47%
Great black-backed gull	0.05	0.02	0.09	218	99	358	68	30.98%
Herring gull	0.15	0.07	0.29	609	274	1148	236	38.66%
Little auk	0.18	0.14	0.23	733	569	902	83	11.30%
Guillemot	7.54	6.67	8.56	30003	26513	34048	1900	6.33%
Razorbill	2.37	1.87	2.9	9428	7435	11520	1071	11.35%
Puffin	0.03	0.02	0.04	110	68	162	25	22.75%
Red-throated diver	0.01	0	0.03	40	0	105	29	72.08%
Fulmar	0.11	0.08	0.15	457	316	599	74	16.12%
Gannet	0.09	0.06	0.13	350	220	522	82	23.27%

Table 67: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 23 on 16 February 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	6.03	4.49	7.87	23965	17867	31293	3480	14.52%
Species								
Wader species	0	0	0.01	9	0	24	9	97.02%
Small gull species	0.99	0.37	1.99	3934	1465	7914	1682	42.74%
Black-backed gull species	0	0	0.01	8	0	24	8	97.03%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Large gull species	0.01	0	0.01	24	0	48	13	54.13%
Gull species	0.01	0	0.02	50	16	88	21	42.16%
Large auk	4.24	3.33	5.16	16859	13246	20513	1926	11.42%
Small auk	0.06	0.03	0.1	248	128	388	68	27.37%
Auk species	0.54	0.36	0.74	2140	1433	2936	377	17.58%
Auk / small gull	0.05	0.02	0.08	185	87	337	67	35.75%
Diver species	0	0	0.01	17	0	39	11	64.09%
Fulmar / gull species	0.14	0.09	0.19	548	364	775	108	19.55%
Gannet species	0.05	0.02	0.09	200	68	370	81	40.48%
Small bird species	0.01	0	0.02	33	0	80	22	67.16%

Table 68: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 23 on 16 February 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Lapwing	0	0	0.01	9	0	24	8	95.23%
Kittiwake	1.02	0.39	1.85	4053	1532	7342	1608	39.68%
Great black-backed gull	0	0	0.01	9	0	24	9	100.19%
Herring gull	0.01	0	0.02	41	0	96	25	60.84%
Little auk	0.01	0	0.03	49	0	104	28	57.29%
Guillemot	3.23	2.45	3.98	12837	9729	15842	1516	11.80%
Razorbill	0.65	0.47	0.87	2598	1887	3470	427	16.42%
Puffin	0.19	0.11	0.29	755	454	1163	187	24.69%
Red-throated diver	0	0	0.01	9	0	32	9	100.36%
Great northern diver	0	0	0.01	9	0	24	9	95.98%
Fulmar	0.12	0.08	0.17	489	321	679	97	19.79%
Gannet	0.05	0.02	0.09	202	72	370	78	38.61%

Table 69: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 23 on 16 February 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Lapwing	0	0	0.01	8	0	24	9	100.88%
Kittiwake	1.02	0.37	1.99	4062	1475	7934	1665	40.97%
Great black-backed gull	0	0	0.01	8	0	24	9	102.14%
Herring gull	0.01	0	0.03	50	8	107	27	53.19%
Little auk	0.02	0	0.03	70	20	134	31	43.76%
Guillemot	3.68	2.88	4.51	14654	11458	17937	1660	11.33%
Razorbill	0.82	0.61	1.06	3249	2421	4199	454	13.97%
Puffin	0.32	0.21	0.46	1262	854	1830	246	19.45%
Red-throated diver	0	0	0.01	9	0	24	8	96.39%
Great northern diver	0	0	0.01	8	0	24	8	94.94%
Fulmar	0.14	0.09	0.2	553	374	783	107	19.25%
Gannet	0.05	0.02	0.09	200	64	378	80	39.80%

Table 70: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 24 on 12 April 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	31.29	27.32	35.16	124464	108677	139842	8153	6.55%
Species								
Small gull species	6.83	5.71	7.98	27162	22716	31722	2458	9.05%
Large gull species	0	0	0.01	16	0	40	11	66.12%
Gull species	0.01	0	0.02	48	16	83	17	35.70%
Large auk	22.05	18.68	25.89	87688	74279	102952	7357	8.39%
Small auk	0.15	0.07	0.25	600	266	975	183	30.44%
Auk species	1.77	1.31	2.36	7055	5222	9406	1018	14.42%
Auk / small gull	0.11	0.08	0.15	454	314	604	78	16.99%
Large auk / diver species	0	0	0.01	8	0	24	8	103.68%
Fulmar / gull species	0.07	0.04	0.12	284	140	460	87	30.64%
Gannet species	0.51	0.42	0.62	2047	1655	2458	210	10.24%
Small bird species	0	0	0.01	16	0	48	16	95.48%

Table 71: Unapportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 24 on 12 April 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	6.88	5.68	8.11	27350	22604	32262	2454	8.97%
Common gull	0.01	0	0.01	24	0	52	13	52.96%
Herring gull	0	0	0.01	17	0	40	12	69.73%
Lesser black-backed gull	0	0	0.01	9	0	24	8	95.14%
Guillemot	18.45	14.84	22.34	73382	59039	88855	7661	10.44%
Razorbill	2.65	2.03	3.42	10559	8079	13586	1479	14.01%
Puffin	0.89	0.58	1.26	3553	2317	5022	728	20.48%
Fulmar	0.03	0.02	0.05	128	64	202	37	28.75%
Gannet	0.51	0.42	0.62	2041	1674	2461	202	9.87%

Table 72: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 24 on 12 April 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Kittiwake	6.9	5.68	8.24	27435	22592	32787	2587	9.43%
Common gull	0.01	0	0.01	25	8	48	13	51.45%
Herring gull	0	0	0.01	19	0	40	11	57.82%
Lesser black-backed gull	0	0	0.01	9	0	28	8	99.38%
Guillemot	19.63	15.97	23.48	78067	63535	93406	7447	9.54%
Razorbill	2.94	2.22	3.7	11677	8841	14725	1575	13.49%
Puffin	1.34	0.88	1.79	5324	3492	7129	926	17.38%
Fulmar	0.03	0.02	0.06	136	66	222	40	28.83%
Gannet	0.51	0.43	0.62	2045	1705	2448	197	9.59%

Table 73: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 25 on 26 April 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
All birds	61.37	47.56	76.56	244078	189147	304496	29394	12.04%
Species								
Duck species	0	0	0.02	16	0	63	16	100%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Broad category								
Small gull species	8.47	4.59	13.79	33675	18275	54841	8939	26.55%
Black-backed gull species	0	0	0.01	9	0	24	8	97.46%
Large gull species	0.01	0	0.03	49	0	109	29	57.87%
Gull species	0.02	0.01	0.03	65	24	117	24	37%
Arctic / common tern	0.04	0	0.09	171	8	370	93	53.87%
Tern species	0	0	0.01	17	0	40	11	64.94%
Tern / small gull species	0.01	0	0.02	31	0	80	24	75.27%
Large auk	47.2	37.77	57.29	187712	150227	227857	19907	10.60%
Small auk	0.73	0.49	1.01	2905	1951	4008	513	17.64%
Auk species	3.06	2.44	3.74	12154	9686	14866	1274	10.48%
Auk / small gull	0.25	0.15	0.39	998	595	1543	245	24.46%
Auk / shearwater species	0	0	0.01	16	0	40	11	66.89%
Diver species	0	0	0.01	9	0	24	8	89.40%
Fulmar / gull species	0.14	0.09	0.2	550	369	789	109	19.67%
Gannet species	1.37	0.79	2.19	5466	3123	8714	1414	25.86%

Table 74: Unapportioned density and population estimates of species groups in the Offshore Ornithology Study Area during Survey 25 on 26 April 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Tufted duck	0	0	0.01	17	0	48	16	90.94%
Kittiwake	8.4	4.79	13.26	33429	19042	52758	8797	26.31%
Little gull	0.01	0	0.02	33	8	64	16	46.75%
Common gull	0.03	0.01	0.05	113	55	180	34	29.58%
Herring gull	0.01	0	0.03	58	8	127	31	53.45%
Sandwich tern	0	0	0.01	9	0	24	8	94.16%
Common tern	0.01	0	0.02	33	0	78	19	57%
Arctic tern	0.02	0	0.05	60	0	191	59	97.12%
Guillemot	45.43	36.31	56.63	180697	144416	225223	20660	11.43%
Razorbill	1.2	1	1.4	4761	3971	5556	402	8.44%
Puffin	2.53	1.92	3.15	10076	7647	12511	1207	11.98%
Red-throated diver	0	0	0.01	8	0	24	8	92.23%
Fulmar	0.11	0.07	0.14	422	295	560	69	16.18%

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Gannet	1.38	0.81	2.2	5485	3213	8769	1494	27.24%

Table 75: Apportioned density and population estimates of species in the Offshore Ornithology Study Area during Survey 25 on 26 April 2021

Category	Density Estimate (birds/km ²)	Lower 95% CI (birds/km ²)	Upper 95% CI (birds/km ²)	Population Estimate (number)	Lower 95% CI (number)	Upper 95% CI (number)	SD	CV
Species								
Tufted duck	0	0	0.01	17	0	48	16	94.27%
Kittiwake	8.86	4.93	13.51	35230	19618	53737	8834	25.07%
Little gull	0.01	0	0.02	54	18	97	21	37.63%
Common gull	0.03	0.01	0.04	111	49	175	32	28.37%
Herring gull	0.02	0	0.03	64	16	128	29	45.09%
Sandwich tern	0	0	0.01	7	0	24	8	107.40%
Common tern	0.03	0	0.07	120	16	263	65	54.40%
Arctic tern	0.02	0	0.05	64	0	192	63	97.66%
Guillemot	46.38	37.12	57.56	184455	147625	228935	20239	10.97%
Razorbill	1.31	1.11	1.52	5203	4426	6037	412	7.92%
Puffin	3.47	2.82	4.14	13821	11198	16478	1350	9.76%
Red-throated diver	0	0	0.01	9	0	32	9	96.64%
Fulmar	0.13	0.08	0.18	502	335	701	89	17.65%
Gannet	1.39	0.82	2.23	5543	3252	8887	1429	25.78%

