

Census of Great Black-backed Gulls breeding in Caithness, Scotland

Robert Hughes, Nina O’Hanlon, Mark Oksien & Robin M. Sellers

Supplementary Material

Table S1. Results of the 2023 census of the population size of Great Black-backed Gull *Larus marinus* breeding in Caithness. Colonies are listed clockwise from the county march at Drumhollistan. Colonies 1–12 are on the north coast, the remainder are on the east coast. Colonies 1, 3–10 & 12–13 are in the North Caithness Cliffs Special Protection Area (SPA), colonies 25–76 are in the East Caithness Cliffs SPA. Also included are colonies 77–83 which had breeding pairs in 2000–22, but which were not occupied in 2023, with the typical colony size provided instead of the number of nests observed. AON = apparently occupied nests. ^a = Colonies included in the annual monitoring programme (Oksien & Sellers 2023); note that two other colonies (Ceann Lethad nam Bo and Traigh Loisgte) had been used in 2022 but were unoccupied in 2023. ^b = nests dispersed across the north-eastern part of the nuclear licenced site. ^c = nests in two main groups, in the northeast (ND3578) and southwest (ND3476) of the island respectively, with the others widely dispersed across the remainder of the island (ND3477/78 & ND3576/77). ^d = with Herring Gulls *L. argentatus*. ^e = with Great Cormorants *Phalacrocorax carbo*. ^f = nests c. 50 m apart. ^g = Cleit Bheag and nr Cleit Mhor c. 70 m apart. ^h = Contains correction for nests in blind spots. ⁱ = formerly there was also a large Herring Gull colony here. ^j = formerly there was a substantial Cormorant colony here; vacated at the same time as the Great Black-backed Gulls. ^k = formerly there was also a medium-sized Herring Gull colony here. ^l = formerly large Herring Gull colony here, which declined over the same period as the Great Black-backed Gulls declined.

	Colony name	Grid reference	Nesting habitat	AON
1	Easter Clett ^a	NC927656	stack	7
2	Dounreay ^b	NC991672	buildings	4
3	nr Creag Bhuidhe	ND057708	stack	1
4	Clett of Thusater	ND063710	stack	1
5	Long Rock	ND074711	grassy ledge	1
6	Heron Craig	ND083712	grassy ledge	1
7	The Clett (Holborn Head) ^a	ND107716	stack	9
8	Easter Head (Dunnet Head)	ND200765	stack	1
9	nr Roughy Kiln (Dunnet Head)	ND215757	rocky promontory	2
10	Outer Sinni Geo (Dunnet Head)	ND216751	stack	1
11	St John’s Point ^a	ND310754	rock pillar	1
12	Stroma ^c	see footnote	ground	63
13	Stacks of Duncansby	ND399721	stack	1
14	nr Skippie Geo (Skirza Head)	ND396689	rocky promontory	1

15	Ness Head (North)	ND382666	stack	1
16	Ness Head (South)	ND385664	rocky promontory	1
17	Bucholly Castle	ND382657	stack	1
18	Black Score	ND380652	stack	1
19	Hobbie Geo	ND367627	stack	1
20	nr Long Geo (Noss Head)	ND376548	stack	1
21	Noss Head (West)	ND385550	stack	1
22	Noss Head (East)	ND389546	stack	1
23	Scholl (Noss Head)	ND389542	stack	1
24	Long Berry (Noss Head)	ND388538	stack	1
25	Stack o' Brough ^{a,d}	ND367482	stack	26
26	Dunbar's Stack ^a	ND365474	stack	2
27	South Stack ^a	ND365473	stack	3
28	Ashy Geo	ND358449	rocky promontory	2
29	Sarclet Haven ^{a,d}	ND352433	rocky islet	1
30	Turrie Geo	ND347426	stack	1
31	Gearty Head	ND347424	stack	1
32	Oily Geo	ND345424	rock pillar	1
33	nr Skeps Geo	ND331413	stack	1
34	Stack of Ulbster ^a	ND339414	stack	3
35	Whale Geo	ND320402	rocky promontory	1
36	Wester Whale Geo	ND319399	rocky islet	1
37	The Riasg	ND310389	rocky promontory	1
38	Hanni Geo	ND307386	rocky promontory	2
39	nr Gunn's Castle	ND306384	rocky promontory	1
40	Halberry Head	ND301375	rocky promontory	1
41	Stack of Mid Clyth ^a	ND299373	stack	9
42	Stacks of Occumster ^{a,e}	ND273353	stack	21
43	Ceann Hilligeo	ND264351	rock pillar	1
44	East Skerry	ND260351	rocky islet	4
45	Maas Stack ^{a,d}	ND243345	rocky islet	1
46	Cleit Thighearn Latheron	ND201326	stack	1
47	Latheronwheel ^a	ND189318	rock pillar	1
48	Little Fraigheach ^f	ND182312	beach/rocky islet	2
49	Fraigheach	ND179308	beach	6

50	Cleit Ruadh	ND174301	rock pillar	1
51	Cleit Bheag ^g	ND173300	stack	1
52	nr Cleit Mhor ^g	ND173300	rocky promontory	1
53	Portormin ^a	ND170293	rocky islet	1
54	Ceann Badaidh na Muic	ND150270	stack	1
55	nr Badaidh na Gaoithe	ND147266	beach	1
56	Leathad na Goibhre ^h	ND141260	beach	5
57	Sturr Ruadh	ND136252	beach	3
58	Screadan (North)	ND137248	beach	1
59	Screadan (Central) ^h	ND134247	beach	8
60	Screadan (South) ^h	ND133245	beach	3
61	Traigh Tuill	ND134242	rock pillar	1
62	Traigh Bhuidhe ^{a,e}	ND128235	rocky islet	1
63	Clais Crochaire ^d	ND124230	rock slab	11
64	nr Creag na Sgadain	ND122228	rock slab	1
65	Berriedale Castle ^a	ND120221	rocky islet	1
66	nr Poll Galion	ND118220	rocky promontory	1
67	Creag nam Bo	ND102206	rocky islet	3
68	Traigh Fhada (North)	ND100206	beach	2
69	Traigh Fhada (South)	ND097203	beach	4
70	Creag Aigeann Sail	ND092200	rocky promontory	3
71	Sron Mhor	ND087196	rocky islet (3), rocky promontory (2)	5
72	Traigh Muidhe Cleite	ND084192	rock slab	4
73	Leac Ghlais	ND077186	rocky islet	1
74	Ousdale Burn	ND076186	rock slab	4
75	Neak Mhor ^a	ND072182	stack	1
76	Dun Glas (Sutherland) ^a	ND058172	rocky promontory	1
77	Brough	ND224742	rocky promontory	small
78	Robbery Head ⁱ	ND221334	rock slab and rocky promontory	medium
79	Craig Skelpin	ND206329	stack	small
80	Ceann Leathad nam Boi	ND133239	rock slab	medium
81	Traigh Loisgte	ND129236	rock slab	medium
82	Cnoc na Stri ^k	ND071181	beach	small
83	Ord Point ^l	ND063176	beach	medium

Table S2. Distribution and spacing of Great Black-backed Gull *Larus marinus* colonies in Caithness in 2023. AON = apparently occupied nests and colony separation is provided as a mean \pm standard deviation, with the range provided in brackets.

Coastal section	No. of colonies	AON	Separation of colonies (km)
North coast	12	92	4.2 \pm 1.1 (0.6 – 10.5)
East coast north of Wick	12	12	1.9 \pm 0.7 (0.4 – 8.0)
East coast south of Wick	52	164	0.93 \pm 0.13 (0.1 – 4.6)

Table S3. Counts of Great Black-backed Gulls *Larus marinus* breeding on Stroma, 1966–2023. AON = apparently occupied nests; SMP = Seabird Monitoring Programme (JNCC 2019).

Year	AON	Source	Comment
1966	38	James (1965-68)	33 AON SE part of island, 2 AON NE & NW coast, 3 western interior of island
1970	50–60	SMP ^b	
1986	c. 130	Gunn (1992)	West side of island
1986	103–134	SMP	
2000	18	SMP	
2004	‘a few’	R. M. Sellers, unpublished data	Large numbers of loafing birds but very few breeding
2006	c. 23	R. M. Sellers, unpublished data	23 AON present at Mell Head (as estimated from boat); small numbers elsewhere.
2016	38	Swann (2018)	Survey carried out from boat, 11-13 June 2016
2023	63	This study	