

Aim: Assessment tool for resident visitor pressure on beaches in Scotland.

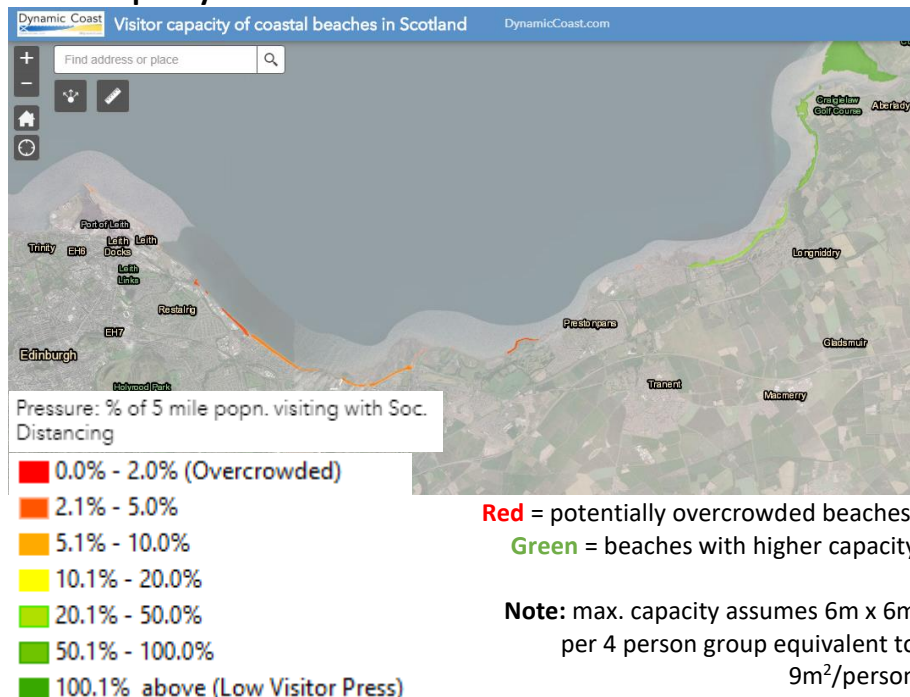
Headlines (based on revised assumptions):

- 1) **Almost half of the population (47% or 2.5m people) live within 5 miles of at least one of our 1,430 beaches, and almost three quarters (72%) live within 10 miles of a beach.**
- 2) **If only 5% of local population visit their beach at high tide, then 12% of beaches are expected to be overcrowded. Reasonable improvement at low tide (7% overcrowded).**
- 3) Given beach capacity (point 2) associated infrastructure is expected to be a limiting factor. (ie road & off-street parking, toilets etc. NB Some car parks & all toilets are closed at time of writing).
- 4) **88% of beaches appear to have sufficient high tide visitor capacity for residents within 5 miles.**
- 5) Analysis can be re-run for different social distance guidelines, travel restrictions and tidal extents. This version (#2) reflects feedback from Police Scotland, with a social distancing density of 6 x 6m for a four-visitor group (equivalent to 9m² per visitor).

Interactive map: <https://arcg.is/1TfiT0>

PLEASE SEE CONDITIONS OF USE BELOW.

Visitor capacity of coastal beaches in Scotland



Highly accessible beaches with highest anticipated pressure

(Values show % of population within 5 miles able to safely access their beach assuming social distancing of 9m² / visitors)

- 1) Cramond (City of Edin) 1
- 2) Dalmeny House (City of Edin) 2
- 3) Fisherrow (East Lothian) 2
- 4) Portobello (main) (City of Edin) 2
- 5) Kinghorn (Fife) 3
- 6) Doonfoot (S Ayr) 4
- 7) Ardrossan (N) (N Ayr) 5
- 8) Aberdeen (Aberdeen City) 6
- 9) Largs Bowen Craigs (A&B) 9
- 10) Arbroath (Angus) 11
- 11) Broughty Ferry (Dundee City) 12
- 12) Etterick Bay (Argyll & Bute) 14
- 13) Ayr South (S Ayr) 15
- 14) Cullen Bay (Moray) 16
- 15) Seamill (N Ayr) 16
- 16) South Bay (Saltcoats) (N Ayr.) 17
- 17) Peterhead (Aberdeenshire) 18
- 18) St. Andrews East Sands (Fife) 23
- 19) Kirkcaldy (Fife) 26
- 20) Troon (South Bay) (S Ayr) 26

Method, Assumptions & Caveats: The Scottish Government's Dynamic Coast researchers have developed an initial screening tool which has identified 1,430 recreational beaches across Scotland. At each beach, the dry area is informed by satellite imagery-derived beach elevation models and amended Open Street Map data. 118 large beaches (>1.5ha) were looked at in detail to consider accessibility (ie high / accessible / limited). The maximum number of socially distancing beach visitors is estimated 6 x 6m for a four-visitor group (equivalent of 9m² per visitor) and combined with resident populations (5 & 10 miles) to estimate a pressure indicator (% of popn. which can fit on dry beach at high tide).

The simplified pressure indicator is assumed to be a factor of population & area at high tide; equal spread of visitor across the beach has been assumed. We acknowledge there are a wide range of unconsidered factors which influence beach visits. Apparently inaccessible and small beaches have been removed from these results. Dry area extends from the back beach (i.e. promenade or dunes) to approximate High Water (20% water occurrence within sentinel imagery derived from our Coast X-Ray technique). Mid-tide extents are also shown on interactive map. Please get in contact should you want further information or amendments.

Annex:**Highly accessible beaches**

	Beach name (LA)	Popn <5miles	# house- holds <5miles	Max height tide capacity @ 9m2/visitor	% of 5mile Popn can access
1	Cramond (City of Edinburgh)	329,595	157,389	4,188	1
2	Dalmeny House (City of Edinburgh)	255,503	120,039	4,609	2
3	Fisherrow (East Lothian)	420,103	198,333	8,831	2
4	Portobello (main) (City of Edinburgh)	397,911	18,895	9,465	2
5	Kinghorn (Fife)	60,948	28,247	1,678	3
6	Doonfoot (South Ayrshire)	66,238	30,456	2,446	4
7	Ardrossan North Bay (North Ayrshire)	54,752	24,480	2,893	5
8	Aberdeen (Aberdeen City)	211,851	99,212	13,576	6
9	Largs Bowen Craigs (Argyll & Bute)	59,770	27,669	5,175	9
10	Arbroath (Angus)	27,000	12,238	3,091	11
11	Broughty Ferry (Dundee City)	136,135	63,180	16,293	12
12	Etterick Bay (Argyll & Bute)	43,258	19,226	5,941	14
13	Ayr South (South Ayrshire)	73,767	33,723	11,029	15
14	Cullen Bay (Moray)	14,858	6,525	2,314	16
15	Seamill (North Ayrshire)	33,221	15,349	5,253	16
16	Saltcoats South Bay (North Ayrshire)	59,171	26,581	10,145	17
17	Peterhead (Aberdeenshire)	22,249	9,555	4,106	18
18	St. Andrews East Sands (Fife)	22,701	8,146	5,287	23
19	Kirkcaldy (Fife)	243,958	111,847	20,508	26
20	Troon South Bay (South Ayrshire)	82,767	38,388	21,564	26
21	Millport (North Ayrshire)	37,361	18,191	5,317	29
22	Carnoustie (Angus)	45,203	20,027	13,346	30
23	Hopeman (Moray)	12,054	4,455	3,578	30
24	Nairn West (Highland)	12,883	5,638	3,854	30
25	Aberdeen (Aberdeenshire)	16,829	6,922	5,643	34
26	Barassie (North Ayrshire)	116,937	52,205	40,892	35
27	Elie Wood Haven (Fife)	7,367	3,542	2,734	37
28	Largo Town (Fife)	40,922	18,954	21,993	54
29	Fraserburgh Bay (Aberdeenshire)	19,484	8,183	11,671	60
30	Largs Bowen Craigs (North Ayrshire)	34,839	16,960	12,579	67
31	North Berwick East (East Lothian)	12,984	5,782	9,085	70
32	North Berwick West (East Lothian)	12,139	5,387	10,050	83
33	St. Andrews West Sands (Fife)	25,394	9,294	34,832.4	137
34	Lunan Bay (Angus)	19,809	9,127	30,441	154
35	Girvan (South Ayrshire)	7,746	3,591	12,686	164
36	Montrose (Angus)	19,425	8,897	33,969	175
37	Dornoch North (Highland)	7,999	3,596	31,233	390
38	Dunbar Bathe (East Lothian)	13,843	5,852	56,848	411
39	Nairn East (Highland)	39,675	17,403	123,343	520

Accessible beaches

	Beach name (LA)	Popn <5miles	# house-holds <5miles	Max hight tide capacity @ 9m2/visitor	% of 5mile Popn can access
1	Portobello (east) (City of Edinburgh)	397,911	188,959	4,874	1
2	Seton-Longniddry (East Lothian)	105,080	45,970	2,048	2
3	Prestwick Bay (Prestwick) (South Ayrshire)	84,229	38,760	1,767	2
4	Peatdraught (Falkirk)	96,661	41,688	2,976	3
5	Peatdraught (City of Edinburgh)	161,915	70,603	5,028	3
6	Largs Bowen Craigs (Inverclyde)	133,091	60,910	3,994	6
7	Silversands (Fife)	143,169	61,418	6,379	9
8	Sandford Bay (Aberdeenshire)	22,552	9,734	2,652	12
9	Prestwick Bay (Troon) (South Ayrshire)	85,847	39,394	10,576	12
10	Ganavan (Argyll & Bute)	12,077	5,350	1,695	14
11	Stevenston (North Ayrshire)	84,513	37,758	12,009	14
12	Peterhead (Aberdeenshire)	22,296	9,570	4,284	19
13	Monifieth (Angus)	98,426	44,937	19,566	20
14	Leven (Fife)	108,359	49,735	22,117	20
15	Muirfield, West Links (East Lothian)	12,467	5,508	2,897	23
16	Pettycur (Fife)	59,283	27,577	16,855	28
17	Largs Bowen Craigs (Argyll & Bute)	75,591	34,730	23,546	31
18	Ardneil Bay (North Ayrshire)	28,039	12,597	8,926	32
19	Crail (Fife)	6,523	3,072	2,266	35
20	Auldhame (East Lothian)	11,239	4,942	4,346	39
21	Coldingham Bay (Scottish Borders)	6,505	2,973	2,549	39
22	Boyndie Bay (Aberdeenshire)	12,560	5,590	4,945	39
23	Scapa Bay (Orkney Island)	9,972	4,537	4,480	45
24	Cullen Bay (Moray)	12,273	5,347	6,121	50
25	Menie-Pettens (Aberdeenshire)	212,927	99,712	112,766	53
26	Elie East Links (Fife)	9,165	4,281	4,985	54
27	Gullane Bay (East Lothian)	14,752	6,537	8,691	59
28	Whitesands (East Lothian)	10,735	4,474	6,409	60
29	Branahuie (Comhairle nan Eilean Siar)	23,771	10,627	7,406	62
30	Sandend (Aberdeenshire)	6,181	2,679	4,113	67
31	Stotfield (Moray)	23,782	9,778	16,477	69
32	Thurso Bay (Highland)	10,860	5,044	8,030	74
33	Elie Centre (Fife)	8,273	3,952	7,053	85
34	Girvan North (South Ayrshire)	9,394	4,343	9,310	99
35	Maidenhead Bay (South Ayrshire)	5,537	2,466	5,540	100
36	Burghead Bay (Moray)	20,994	8,888	21,449	102
37	Sand of Beeman (Orkney Island)	9,683	4,419	10,368	107
38	Shell Bay (Fife)	53,426	25,095	35,416	111
39	Culzean Bay (South Ayrshire)	7,472	3,313	8,330	111
40	Coll (Comhairle nan Eilean Siar)	12,037	5,363	13,518	112
41	Millport (North Ayrshire)	18,437	8,879	21,199	115
42	Ledaig (Argyll & Bute)	12,365	5,490	14,416	117
43	Thortonloch (East Lothian)	5,537	2,223	8,440	152
44	Yellowcraigs (East Lothian)	13,216	5,810	20,274	153
45	Broad Sands (South Ayrshire)	9,413	4,361	15,880	169
46	The Wig (Dumfries and Galloway)	26,850	12,332	23,802	174
47	Traigh Rebac (Comhairle nan Eilean Siar)	7,344	3,084	13,712	187

48	Etterick Bay (Argyll & Bute)	57,379	25,699	45,797	227
49	Sands of Forvie (Aberdeenshire)	12,605	5,085	29,979	238
50	Tentsmuir Sands (Fife)	87,516	37,358	212,730	243
51	Sinclair's Bay (Highland)	9,375	4,232	25,523	272
52	St. Cyrus (Aberdeenshire)	37,589	16,332	41,673	281
53	Lossiemouth East (Moray)	55,478	23,802	88,607	285
54	Rosemarkie (Highland)	15,418	6,379	22,908	298
55	Littleferry - Golspie (Highland)	5,607	2,594	18,109	323
56	Strathbeg (Aberdeenshire)	40,571	17,215	138,778	342
57	Cruden Bay (Aberdeenshire)	5,722	2,436	19,855	347
58	Brighouse Bay (Dumfries and Galloway)	5,558	2,532	20,813	374
59	Port nam Marbh (Argyll & Bute)	6,345	3,065	32,780	517
60	Dunnet Bay (Highland)	5,034	2,330	45,126	896

End.