Seabirds

Scottish Government
Riaghaltas na h-Alba
gov.scot

Key message

Scotland's breeding seabirds are of international importance. Since 2011, numbers and breeding success have been stable although their abundance has declined by 38% since 1986. The decline was steepest during 2000 to 2011 due to pressures including changes in food availability and the effects of non-native species at breeding sites.

Common guillemot at Fowlsheugh RSPB reserve. © Lorne Gill/NatureScot.

Background

Seabirds include those groups of birds that spend most of their life at sea or along the coast. Most have special adaptations for surviving in the marine environment and some only ever come to land to breed. In Scotland, this group of birds includes the petrels and shearwaters (Procellariiformes); gannets and cormorants (Suliformes); skuas, gulls, terns and auks (Charadriiformes) (Figure 1).

Scotland's seabirds are of international importance (Mitchell et al., 2004). Twenty-four species of seabird regularly breed in Scotland. Of these, Scotland hosts 56% of the world's breeding population of great skua, 16% of the world's Manx shearwater and 20% of the world's northern gannet. Within Europe, Scotland also

Shearwaters
(Manx shearwater)

Gannets (northern gannet)

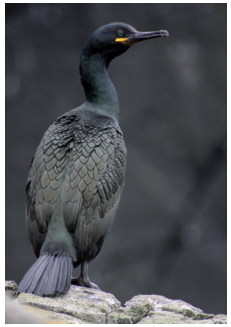
Skuas (great skua)

Petrels
(European storm petrel)

Gulls (black-legged kittiwake)

Terns (Arctic tern)

Auks (Atlantic puffin)



Cormorants
(European shag)

Figure 1:
Examples of seabird species found in Scottish seabird colonies. Manx shearwater © Laurie Campbell/NatureScot; Arctic tern © Martina Cross; European storm petrel © Chris Gomersall; European shag © David Pickett; All other images © Lorne Gill/NatureScot.

For further information on this topic go to: https://marine.gov.scot/sma/assessment/seabirds

has 12% of the continent's northern fulmar, 11% of the black-legged kittiwake and 43% of Europe's common guillemot. For many other species Scotland holds between 1 and 10% of the European breeding population.

Globally seabirds are considered the most vulnerable group of birds and within the UK 22 breeding species are now on the red or amber lists of Birds of Conservation Concern. Of these, 21 breed in Scotland, and Scotland hosts the bulk of the populations of most of these species. Birds of Conservation Concern 4: the Red List for Birds, published in 2015, is the latest iteration of the multi-agency produced assessment of the status of the UK's birds.

Results

The trend for most species since 2011 (date of Scotland's Marine Atlas (Baxter *et al.*, 2011)) has been relatively stable with many of the regularly monitored species at higher levels in most years (Table 1).

Table 1:
Change for seabird numbers index between 2011 to 2018. Index for 2011 scaled to 100.

Species	2011	2012	2013	2014	2015	2016	2017	2018
Arctic skua	100	82	69	78	94	89	69	79
Arctic tern	100	178	218	268	227	179	254	162
Black guillemot	100	109	115	144	107	128	117	254
Black-legged kittiwake	100	94	71	85	95	91	112	91
Common guillemot	100	104	102	111	121	127	133	133
Common gull	100	102	104	100	92	81	103	83
Common tern	100	111	150	144	110	174	181	178
European shag	100	113	90	84	93	95	107	104
Great black-backed gull	100	82	103	116	110	124	88	66
Herring gull (natural-nesting)	100	164	132	178	101	168	114	150
Northern fulmar	100	83	80	88	74	107	81	69

There are notable increases over the 2011 to 2018 period for terns (both common and Arctic terns show significant increase in numbers), black guillemot and northern gannet, which has been increasing for some time. The 2018 index value for black guillemot is unexpectedly high and is the first time since monitoring started that the species has produced a value above the long-term baseline. Common guillemot shows a steady increasing trend, which has seen it almost regain the levels at the start of the index period. For common tern this increase has been sufficient for it to return to numbers above the 1986 baseline, but for Arctic tern, which is a much more common and widespread species in Scotland, the recent increase still leaves numbers below those found in 1986. Arctic skua, black-legged kittiwake, common gull, great black-backed gull and northern fulmar all show declines over the period.

Productivity is more variable. Since 2011 the productivity index has varied between 66 and 87% of the 1986 baseline, with the long-term average over the period 1986 to 2016 being around 76% of the 1986 baseline. Breeding success across the time series varied for the 12 species assessed

(Table 2). In 2017, breeding success was above the long-term average for black-legged kittiwake and herring gull. Arctic skua, Atlantic puffin, common tern, great skua, little tern and northern fulmar had lower breeding success. Breeding success of all other species was around the long-term average.

Table 2:

Change in abundance (in percentage) and productivity of Scottish seabirds (young fledged per pair) since 1986 and from 2011 to 2018

	Change in number since 1986 (baseline year) (%)	Change in number 2011 to 2018 (%)	Breeding success (young/pair) (average 1986 to 2016)	Breeding success (young/pair) (2018)
Arctic skua	-80	-5	0.32	0.233
Arctic tern	-49	+20	0.11	0.19
Atlantic puffin			0.55	0.74
Black guillemot	+34	+80		
Black-legged kittiwake	-69	-3	0.56	0.57
Common guillemot	-2	+24	0.57	0.67
Common gull	-39	-12		
Common tern	+20	+52	0.47	0.56
European shag	-43	+2		
Great black-backed gull	-69	-15		
Great skua			0.51	0.34
Herring gull (natural-nesting)	-42	+19	0.58	0.93
Little tern			0.29	0.42
Northern fulmar	-43	-25	0.46	0.41
Northern gannet			0.69	0.73
Sandwich tern			0.25	0.39

Looking over the time series from 1986 to the most recent estimate in 2018:

- since 2011 the index of number of breeding seabirds (Figure 2) has remained stable following a previous period of sustained decline. By 2018, breeding numbers were 56% of the 1986 level. The long period of decline for the 11 species included in the index occurred between 1990 and 2011
- since 2011 the index of breeding success (Figure 3) has fluctuated but the average value is close to the long-term average from 1986 to 2018. From 1990 to 2000 breeding success was generally above the long-term average, and between 2000 and 2010 mostly below the average. Data from 12 species are included in the breeding success index.
- as the breeding success index is based on the relative value compared to the 1986 baseline, it does not necessarily follow that values above average reflect a level of breeding success that will lead to an increase in the number of seabirds.

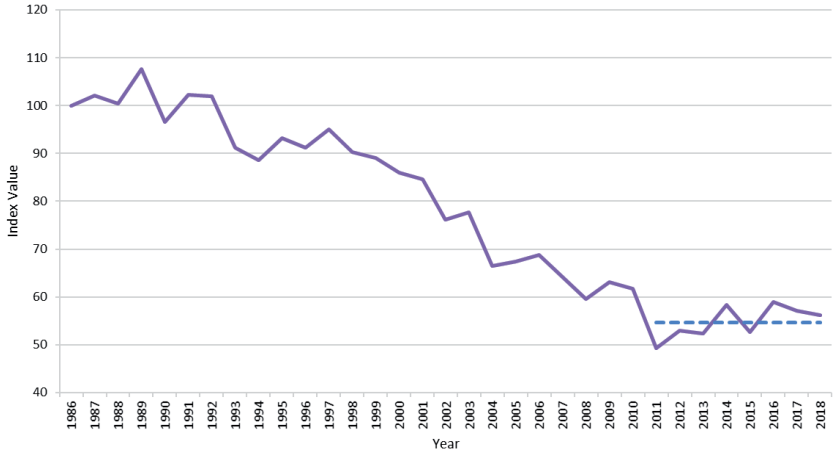


Figure 2:

Index of breeding numbers (abundance) of seabirds 1986 to 2018. Index set to 100 at start of period. Blue dashed line shows average index level from 2011 to 2018.

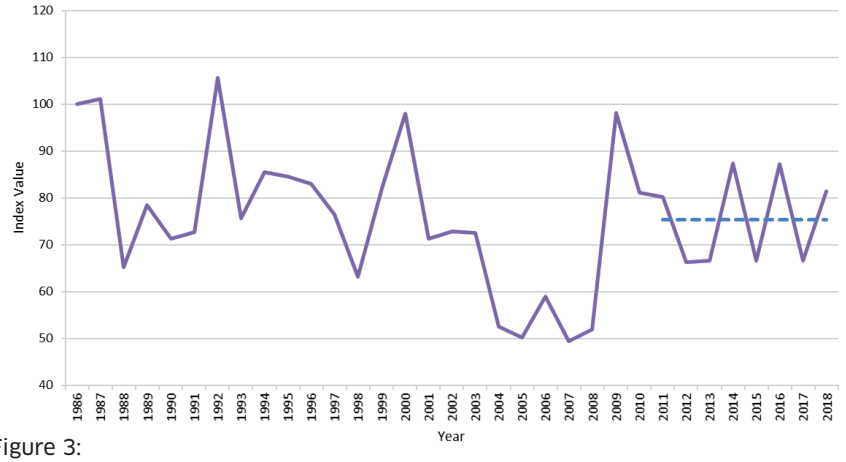


Figure 3:

Index of breeding success of seabirds 1986 to 2018. Index set to 100 at start of period. Blue dashed line shows average productivity from 2011 to 2018.

The individual species' trends show different patterns, with some seabirds such as black-legged kittiwake and Arctic skua showing large declines, whereas northern gannet has shown large increases. This is consistent with results from OSPAR which showed declines were largely for species that are surface feeding (e.g. black-legged kittiwake in both North Sea and Arctic Sea regions) or reliant upon surface feeders (Arctic skua).

Conclusion

The indices of seabird abundance and breeding success have shown a degree of stability over the period 2011 to 2018. Individual populations of seabird species have changed, with significant decreases in black-legged kittiwake and Arctic skua, but large increases in northern gannet.

The 2018 abundance of seabird species had declined by 38% from the 1986 baseline value with the steepest decline during the period 2000 to 2011. During 1986 to 2018, breeding success of seabird species in Scotland has on average been 20% below the baseline set at the start of the period. Average breeding success was at its highest during the 1990s, at its lowest during 2004 to 2008 and has subsequently shown some improvement.

The seabird indicator uses data from the SMP annual sample. The quality, quantity and geographical spread (Figure a) of these data are good, however, the last national seabird census was over 15 years ago and therefore, reduces the assessment confidence to medium.

At present there is not a full understanding of the mechanism/s driving seabird populations around Scotland. Further research is required to inform knowledge gaps and make links to the underlying drivers of change.

Knowledge gaps

- Breeding numbers and success trends at a regional (sub-Scotland) level.
- Breeding numbers and success of shearwaters and petrels.
- Research on the mechanisms and drivers of changes in seabird populations particularly, climate change, predator-prey dynamics, fisheries bycatch, marine energy collision risk and contaminants.
- The location of key wintering areas for breeding seabirds.

Status and trend assessment

National Level Assessment of seabird abundance (2011 to 2018)

Species	Status with confidence	Trend with confidence
All seabirds		
Arctic skua		
Arctic tern		
Black guillemot		
Black-legged kittiwake		
Common gull		
Common tern		
European shag		
Great black-backed gull		
Common guillemot		
Herring gull (natural-nesting)		
Northern fulmar		

SMR 1 - Forth and Tay

Species	Status with confidence	Trend with confidence
Black-legged kittiwake		
European shag		
Lesser black-backed gull		
Herring gull (natural-nesting)		
Atlantic puffin		
Common guillemot		
Razorbill		
Northern fulmar		

SMR 3 - Moray Firth and SMR 6 - North Coast

Species	Status with confidence	Trend with confidence
Great cormorant		
European shag		
Black-legged kittiwake		
Great black-backed gull		
Herring gull		
Common guillemot		
Razorbill		
Atlantic puffin		
Northern fulmar		

Status assessment for these SMRs is for 2011 to 2018, but Trend assessment is for 2000 to 2016

SMR 5 - Shetland

Species	Status with confidence	Trend with confidence
Black guillemot		
Black-legged kittiwake		
Arctic tern		
European shag		
Common guillemot		
Razorbill		
Great black-backed gull		
Herring gull		
Great skua		
Arctic skua		
Northern fulmar		

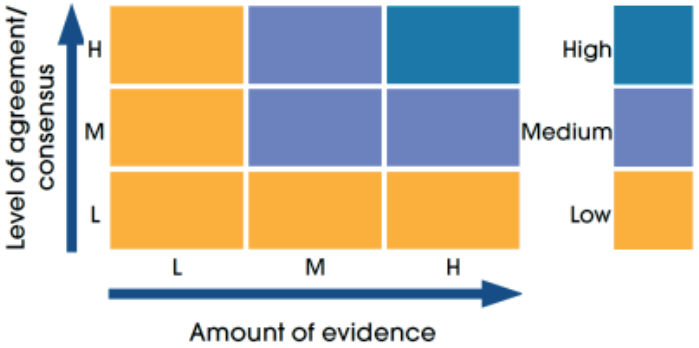
SMR 7 - West Highland

Species	Status with confidence	Trend with confidence
Black-legged kittiwake		
European shag		
Common guillemot		
Razorbill		
Great black-backed gull		
Herring gull		
Lesser black-backed gull		
Northern fulmar		

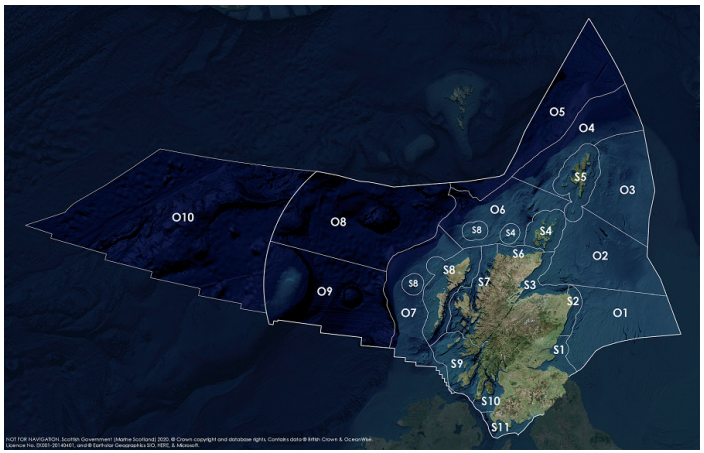
Status and trend assessment legend

Status assessment (for Clean and safe, Healthy and biologically diverse assessments)		Trend assessment (for Clean and safe, Healthy and biologically diverse and Productive assessments)	
	Many concerns		No / little change
	Some concerns		Increasing
	Few or no concerns		Decreasing
	Few or no concerns, but some local concerns		No trend discernible
	Few or no concerns, but many local concerns		All trends
	Some concerns, but many local concerns	**Confidence assessment**	
	Lack of evidence / robust assessment criteria	**Symbol**	**Confidence rating**
	Lack of regional evidence / robust assessment criteria, but no or few concerns for some local areas		Low
	Lack of regional evidence / robust assessment criteria, but some concerns for some local areas		Medium
	Lack of regional evidence / robust assessment criteria, but many concerns for some local areas		High

Overal confidence

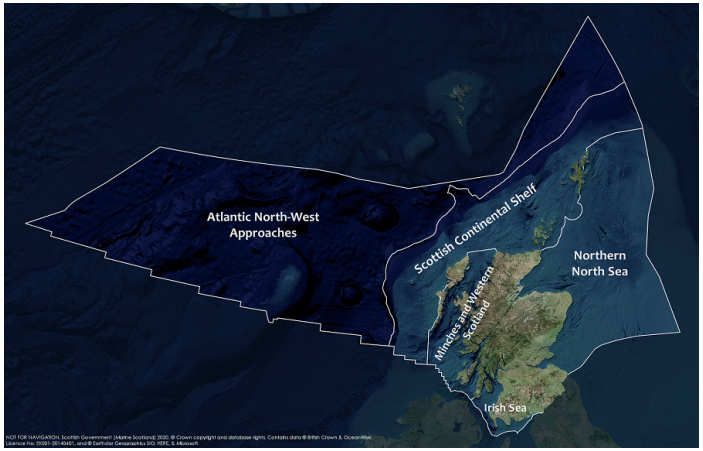


Assessment regions

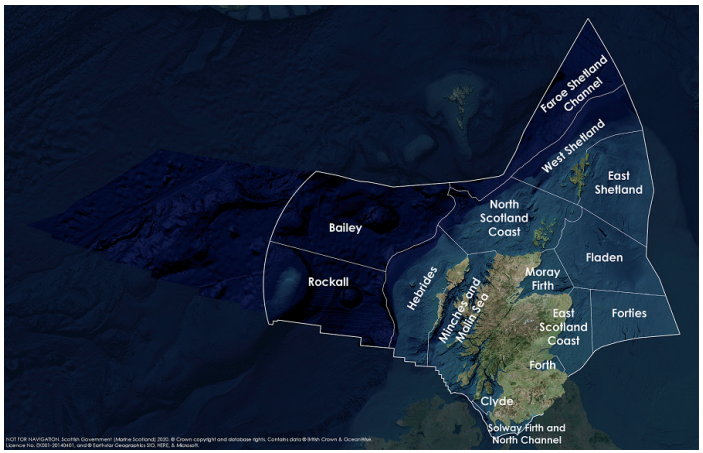


The Scottish Marine Regions (SMRs; S1 – S11) and the Scottish Offshore Marine Regions (OMRs, O1 – O10)

Key: S1, Forth and Tay; S2, North East; S3, Moray Firth; S4 Orkney Islands, S5, Shetland Isles; S6, North Coast; S7, West Highlands; S8, Outer Hebrides; S9, Argyll; S10, Clyde; S11, Solway; O1, Long Forties, O2, Fladen and Moray Firth Offshore; O3, East Shetland Shelf; O4, North and West Shetland Shelf; O5, Faroe-Shetland Channel; O6, North Scotland Shelf; O7, Hebrides Shelf; O8, Bailey; O9, Rockall; O10, Hatton.



Biogeographic, Charting Progress 2 (CP2) Regions. These have been used as the assessment areas for hazardous substances.



Scottish Sea Areas as used in Scotland's Marine Atlas 2011. These are sub divisions of the biogeographic, or Charting Progress 2 (CP2), Regions.

Scottish Government
Riaghaltas na h-Alba
gov.scot

marinescotland

NatureScot
Scotland's Nature Agency
Buidheann Nàdair na h-Alba

JNCC
Joint Nature Conservation Committee

SEPA
Scottish Environment Protection Agency

This material was published on the Scottish Marine Assessment 2020 portal, December 2020