

C5d Birds of the Countryside: Seabirds

This Evidence Statement should be read in conjunction with the *Summary of Evidence* document (Annex 3). Assertions in bold text have been assigned a confidence rating following assessment by a panel of independent experts (see main report for details).

A. Background, structure and statistical issues/biases

- This indicator describes UK trends in seabird species from 1986-2014, based on 13 species for which data are available.
- Indices are derived from counts under the Seabird Monitoring Program. Each species is given equal weighting, and the annual index is the geometric mean of the individual species indices for that yearⁱ.
- For some species, a high proportion of known colonies are included in the indicator. For others the SMP samples a small and potentially biased subset of the total populationⁱⁱ. For species with substantial inland breeding populations, only the data from coastal colonies are used.
- Assessment of the seabird index is relatively robust to temporal biasesⁱⁱⁱ.

B. Representation

1. **The indicator is the average trend in relative abundance of a suite of seabirds, but excludes inaccessible locations and species difficult to survey** ^[High].
2. **There is little evidence that other marine organisms show similar patterns of change as seabirds** ^[Medium], although we know some are affected by similar drivers of change. Seabird populations are slow to respond to environmental change so may lag behind changes in other taxa^{iv}.

C. The Trend

3. The headline indicator declined by 21% from 1986-2014. This decline began around 2003: before this date the indicator was stable^v. **The apparent decline in the seabird indicator is substantial but this has not been statistically tested** ^[Medium]. Three species (21%) declined by at least 1% per year and one (7%) increased^{vi}, although species contributing to the seabird indicator are more consistent in their trends than for any other of the eleven species indicators^{vii}.
4. The indicator has declined by 7% in the short term (2009-2014), during which time six species (46%) declined and five (38%) increased^{vi}. The official assessment is that the indicator is in decline, although this is based on a rule-of-thumb rather than a formal statistical comparison. Given that the survey has low power to detect changeⁱⁱ for some species, **the balance of evidence is that declines in seabirds abundance have continued over the past few years** ^[Medium].
5. The England seabird indicator exhibits a different trend from the UK, having increased by 25% in the long-term and 4% in the short-term. A comparable indicator for Scotland shows a severe decline, of 42%, over the same period^{viii}. However, the difference between nations is largely attributable to differences in species composition. **The evidence that Scottish populations are decreasing compared with England is inconclusive** ^[High].

D. Wider Application

6. Birds are charismatic and highly visible animals that provide an important way for people to connect with nature (i.e. cultural ecosystem services)^{ix}. However, the link between species status and cultural services is not well-established, so it remains unclear how changes in the indicator could be used as a measure of cultural ecosystem services.
7. **The status of seabirds should not be used to measure progress towards Aichi target 12** ^[Medium] (extinction of threatened species)^{xii}. Most seabirds remain common: the subset that are rare or declining also contribute to indicator C4a, which is a more direct measure of progress towards Aichi target 12.

E. Drivers of change

8. **There is good evidence to suggest that intensive fishing has had a very strong negative impact upon the indicator** ^[Medium], by depleting stocks of fish species important to breeding seabirds^x.
9. Conversely, **recent improvements in fishing practices have had a strong adverse effect on seabirds** ^[Medium] that had previously benefitted from feeding on fishing discards^{xi}.
10. **Climate change has had a very strong and entirely negative impact upon seabirds in the indicator** ^[Medium], due to both the impact of sea level rise and rising sea surface temperatures influencing prey abundance^{xii}.
11. **There is moderate evidence suggesting that interactions with other species may have contributed to the decline in the indicator** ^[Medium], including both native (e.g. Great Skua) and non-native (e.g. American Mink)^{xiii}.

Endnotes refer to the “Technical Report – Summary of Evidence” document, unless otherwise stated

ⁱ http://jncc.defra.gov.uk/docs/UKBI2015_TechBG_C5_Final.docs

ⁱⁱ http://www.bto.org/sites/default/files/shared_documents/publications/research-reports/2010/rr573.pdf

ⁱⁱⁱ Sections 2.3.4 – 2.3.6, notably figure 2.6.

^{iv} Section 5.4.1.3.

^v <http://jncc.defra.gov.uk/page-4235>

^{vi} http://jncc.defra.gov.uk/docs/UKBI2015_DS_C5_Final.xlsx

^{vii} Section 2.1.5, table 2.1.

^{viii} <http://www.snh.gov.uk/docs/B424907.pdf>

^{ix} Section 3.4.2.1

^x Section 3.2.6, especially table 3.17 and subsection 3.2.6.1

^{xi} Section 3.2.6, especially table 3.17 and subsection 3.2.6.4

^{xii} Section 3.2.6, especially table 3.17 and subsection 3.2.6.2

^{xiii} Section 3.2.6, especially table 3.17 and subsection 3.2.6.3