

JOINT
NATURE
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COMMITTEE

UK Seabirds in 2004



Results from the UK
Seabird Monitoring Programme

Seabird conservation

The UK hosts over seven million breeding seabirds, of 25 species, 13 of which are present in internationally important numbers. Seabird conservation is an important aspect of the implementation in the UK of the EC Birds Directive, which concerns the conservation of wild birds and their habitats. Eight seabird species are listed in Annex I of the Directive and are subject to special conservation measures; to date, 243 seabird colonies in the UK have been classified as Special Protection Areas (SPA). A crucial part of SPA management is the regular monitoring of population trends.

Seabird monitoring

Since 1986, JNCC's Seabird Monitoring Programme (SMP) has co-ordinated seabird monitoring on a UK-wide basis, using data collected annually from a representative sample of colonies. The programme assists JNCC, the statutory country nature conservation agencies and partner organisations to monitor aspects of the health of the marine environment and to provide sound advice on the conservation needs of breeding seabirds. This leaflet summarises the main findings of the SMP in 2004, to be published in detail in the next issue of *Seabird numbers and breeding success in Britain and Ireland* in May 2005 (see back cover for details).



Tim Dunn (JNCC)

Seabird numbers and breeding success in 2004

Summarised here are changes in numbers and breeding success of northern fulmar, black-legged kittiwake and common guillemot, for the UK and selected regions thereof. Together, these species constitute almost half of the breeding seabirds in the UK and are the most widely monitored. They also represent three distinct feeding niches and thus, by examining their breeding success, we hope to gain some insight into annual variation in the availability of different food types. Northern fulmars feed at or near the sea surface on plankton, fish and fisheries waste; black-legged kittiwakes feed predominantly on small fish such as sandeels, taken from just below the sea surface; common guillemots are a diving species, able to exploit a wider range of fish species and sizes than can surface-feeders. Other key determinants of numbers and breeding success include the degree of predation and weather conditions. It should be noted that UK seabirds reach maturity when 3-9 years old, so a change in breeding success will only be manifested in the breeding population several years later. Notable aspects of other seabird species in 2004 are also highlighted.

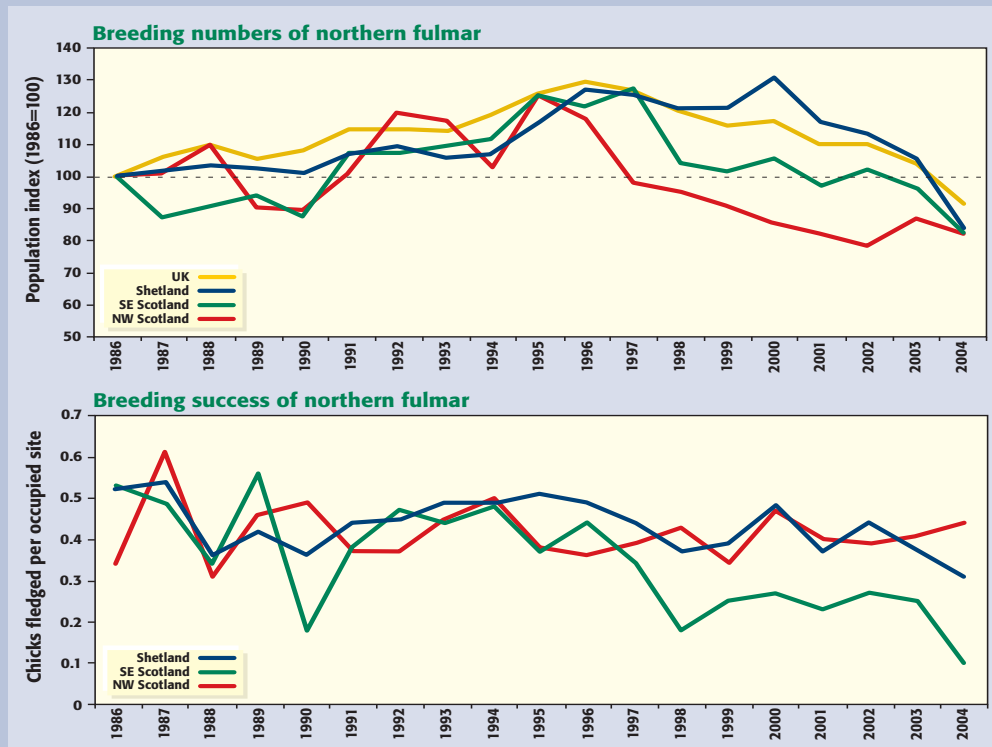
Population indices

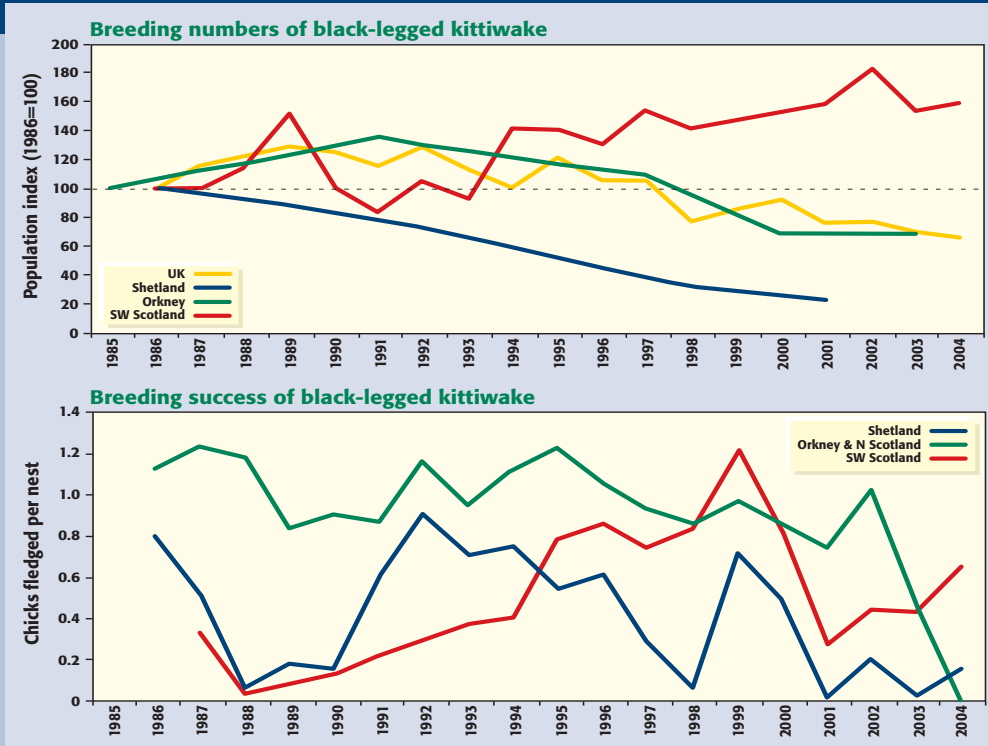
Breeding numbers of each species are shown as population indices, whereby the number of birds counted in a sample of colonies in a particular year is expressed as a percentage of the number present in the same colonies when the SMP was initiated, in 1986.

Northern fulmar

Breeding numbers of northern fulmar in the UK increased fairly steadily between the mid 1980s and mid 1990s, followed by an equally steady decline that has continued into 2004. A similar trend occurred in most regions of the UK including Shetland (and Orkney, not shown), SW Scotland and NW Scotland, which together hold most of the monitored colonies. Since monitoring began in 1986, breeding success in Shetland and NW Scotland has fluctuated, but with no discernible reduction in success that could have led to the observed decline in breeding numbers. Thus, decreases in survival rates are more likely to be responsible for the

declines in numbers there. The varied diet of northern fulmar makes it difficult to pin-point causal factors relating to food, but observed declines of their zooplankton prey and of the North Sea whitefish fishery and consequent levels of discards and offal may be responsible. Many northern fulmars are caught accidentally by long-line fisheries in the Norwegian Sea and possibly NE Atlantic, while the effect of ingested plastic debris has also yet to be fully determined. In SE Scotland, breeding success fell to a very low level from 1998 onwards, with 2004 the lowest on record; the reasons for this are unclear, but it may lead to an even faster rate of decline in numbers in this region in coming years.





Black-legged kittiwake

Numbers of black-legged kittiwake breeding in the UK, after increasing in the mid to late 1980s, have been falling since the early 1990s; the results from 2004 show the decline continues. Changes in the population index in Orkney quite closely mirror the UK trend, but the Shetland index has declined steadily since 1986. Declines have also occurred in other parts of eastern Britain and, to a lesser extent, in Wales, while numbers have increased in SW Scotland. Regional variations in population trends appear to be linked to regional differences in breeding success over the same period. In 2004, throughout Shetland, colonies of kittiwakes failed to raise any young - the fourth successive year of very low productivity. In Orkney, exceptionally, no young were raised at any monitored kittiwake colonies - their least productive breeding season since the SMP began. The main reason for the poor success in the Northern Isles appears to be low food availability.

Breeding success of black-legged kittiwakes in Shetland and in Orkney are correlated, but has been consistently lower in Shetland. Both populations rely on the same sandeel stock for food, which spawns around Orkney, with the Shetland population relying on currents to bring the larval sandeels into Shetland waters. In some years however, such as the late 1980s and 2001-04, the drift of larvae to Shetland appears to have been weak or failed. Furthermore, 2004 was the first year on record of near breeding failure in Orkney as well as Shetland, suggesting the Orkney stock itself was unusually low. Other kittiwake colonies along the British North Sea coast experienced a poor breeding season in 2004, but some - such as in NE Scotland - were quite productive, suggesting a locally variable food supply. In contrast, colonies in western Britain - SW Scotland, for example - had a much more successful breeding season in 2004.

guillemots



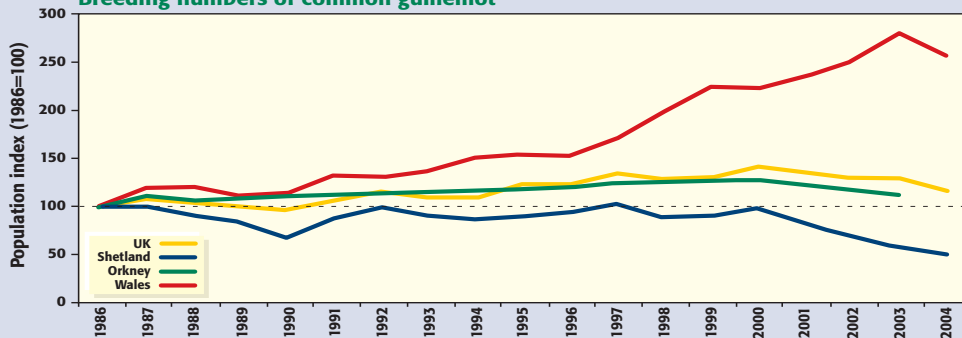
Ian Mitchell (NCC)

Common guillemot

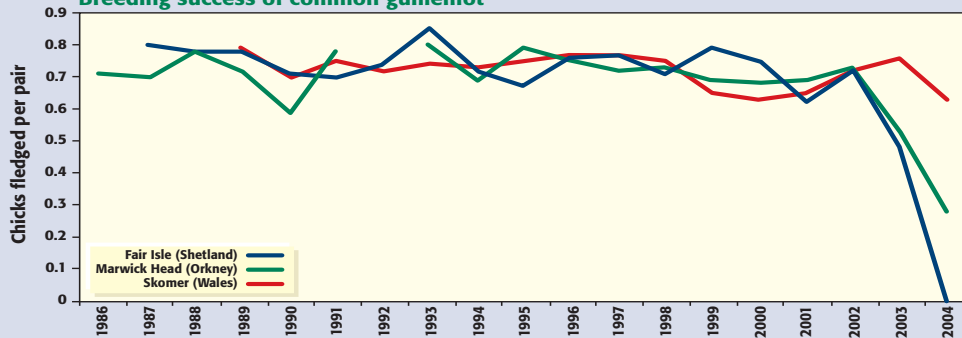
During 1986-2000, the population index for guillemots in the UK and Orkney increased, and remained fairly stable in Shetland, but all three indices have declined in each year since. In contrast, the number breeding in Wales has increased quite dramatically and continues to increase in NW and NE England, though the populations in each of these regions are far smaller than in the Northern Isles. The recent downturn in numbers of guillemots in the Northern Isles does not appear to be a result of poor breeding success in previous years (guillemots mature when they are 5-6 years old). However, breeding success there fell in 2003 and dramatically so in 2004; on Fair Isle in Shetland an unprecedented complete breeding failure occurred in 2004, and other colonies in Shetland fared only marginally better. Observations suggest that food shortage

was responsible for poor breeding success of common guillemots in 2003 and 2004, as it was for kittiwakes and other species that feed on sandeels. While black-legged kittiwakes rely on surface-swimming sandeels, common guillemots can dive for sandeels and other fish species deeper in the water. This has meant that common guillemots have not usually experienced the severe food shortage that affected kittiwakes, so the low success of guillemots in Orkney and Shetland in 2003 and particularly in 2004 is indicative of low availability of sandeels (and perhaps other fish) throughout the water column, rather than simply near the surface.

Breeding numbers of common guillemot



Breeding success of common guillemot



Arctic tern feeding its chick



© Mike Brown Photography

Other species

The apparent shortage of sandeels around the Northern Isles and at other North Sea colonies has impacted upon several seabird species. Arctic terns, which dive shallowly for small fish, have experienced near breeding failure at many Northern Isles and E Scotland colonies during 2001-04. Arctic skuas obtain food by stealing fish from terns, kittiwakes, guillemots and other auks; because of the lack of success of their host species, Arctic skuas too have experienced extremely low breeding success in 2003 and 2004 in Shetland (but fared better in Orkney). Atlantic puffins dive for a variety of small fish,

primarily sandeels, but have not generally experienced the low breeding success of other sandeel-feeders in recent years. This may be due to their more catholic diet and, as they nest in burrows, their chicks are not as prone to predation from gulls and great skuas as are those of cliff or ground-nesting species.

As in previous years, severe summer storms significantly reduced breeding success at some colonies in 2004. Many young European shags and Atlantic puffins in eastern Scotland were killed by heavy rain and onshore gales that also badly affected many cliff-nesting species and terns in NE England.

What's going on with sandeels?

While by no means the sole food of breeding seabirds in the UK, sandeels do play an important role for many species. The underlying cause of the sandeel shortage may be due to environmental conditions, rather than any immediate effect of commercial sandeel fishing in the North Sea. The sandeel fishery has been closed since 2000 in an area off northeast Scotland to Northumberland, and subject to restrictions in Shetland, with a voluntary ban around south Shetland in 2004. The former ban coincided with increased breeding success of black-legged kittiwake and European shag in

SE Scotland, but in 2004 (with the ban intact) success there was poor, so factors other than fishing are clearly important. Previous research has found links between seabird populations and sandeel stock size/structure and climate. For instance, in the North Sea, an increase in sea surface temperature has led to a shift in plankton/sandeel dynamics with the overall effect of reducing sandeel abundance. Further research is under way to gain a better understanding of these complex interactions, particularly with respect to the role of fisheries and climate change.



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sandeels

Acknowledgements

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Further reading

Seabird numbers and breeding success in Britain and Ireland, 2003. JNCC. Peterborough. 2004. This report series presents SMP results in full, published annually since 1989 (see www.jncc.gov.uk/publications). The 2004 edition (summarised here) will be published in May 2005.

Seabird Populations of Britain and Ireland.

T. & A.D. Poyser. London. 2004.

This book presents the results of Seabird 2000, a complete census of all breeding seabirds in Britain and Ireland during 1998-2002.



www.jncc.gov.uk/seabirds

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The Joint Nature Conservation Committee advises the UK Government on national and international wildlife and conservation issues on behalf of English Nature, the Countryside Council for Wales, Scottish Natural Heritage and the Environment and Heritage Service, Northern Ireland.

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