The UK Seabird Monitoring Programme (SMP) facilitates the co-ordination of breeding seabird monitoring on a UK-wide basis and is one of the most extensive and detailed of its kind, collecting annual demographic data on 26 species. Population trends of three abundant and widespread species with different feeding strategies are presented, and likely causative factors discussed.

The Joint Nature Conservation Committee’s (JNCC) Seabird Monitoring Programme has, since 1986, co-ordinated the monitoring of breeding seabirds on a UK-wide basis (Mavor et al. 2004). The aim of the SMP is to ensure sufficient data on seabird numbers and breeding success are collected to enable their conservation status to be assessed. The programme assists JNCC and partner organisations in providing advice relevant to government and others on the conservation needs of breeding seabirds.

Standardised methods of collecting field data on breeding numbers and breeding success were used (Walsh et al. 1995) and promoted nationwide to ensure comparability of results. UK-wide breeding numbers are presented as 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.

Fig. 1 shows the annual UK breeding population indices of three abundant and widespread seabird species from 1986 to 2003. Black-legged Kittiwakes *Rissa tridactyla* have declined significantly since 1995, at a mean rate of -5.8% per annum (t=5.04, P<0.001), in contrast to increases in the population of Common Guillemots *Uria aalge* (though the latter has declined since 2000). These trends are thought to be related to the feeding strategies of each species: the former restricted to feeding near the sea surface (mostly taking small sandeels *Ammodytes* spp.) while the latter can dive to reach a wider range of fish. Sandeel recruitment in the North Sea has been negatively affected by sea temperature increases in recent decades (Arnott & Ruxton 2002).

![Fig. 1. UK population indices of Black-legged Kittiwake *Rissa tridactyla*, Northern Fulmar *Fulmarus glacialis* and Common Guillemot *Uria aalge*, 1986-2003.](image)

![Fig. 2. Breeding success of Black-legged Kittiwake *Rissa tridactyla* on Orkney and Shetland, 1986-2003.](image)
and it is likely that their availability to surface-feeders such as Kittiwakes also declined, at least locally. For example, in Shetland in 1988-90, 1997-98 and 2001-2003, the breeding success of Black-legged Kittiwakes was extremely low (Fig. 2), a phenomenon that has been correlated with low local availability of sandeels in that region (Oro & Furness 2002). In contrast, in adjacent Orkney the species was much more successful in each year and, presumably, sandeels more available.

The Northern Fulmar *Fulmarus glacialis* feeds on fish, zooplankton and discards and offal from fishing boats. The increase in numbers (up to c. 1996; Fig. 1) may be attributed to moderate levels of fishing activity (and associated feeding opportunities); recent declines are perhaps due to decreased fishing effort and to declines in zooplankton and sandeels (Tasker 2004).

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REFERENCES


