

Changes in the numbers of some cliff-breeding seabirds in Iceland during two decades

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A large proportion of certain North Atlantic pelagic seabirds breed on Icelandic bird-cliffs in dense aggregations that have been exploited from times immemorial and are widely known. Large scale changes in these colonies are usually noticed by the general public, but slow change in numbers can only be estimated by relatively accurate, repeated counts.

The results of monitoring counts in some bird-cliffs during two decades are outlined. Censuses were repeated at 5-10 year intervals in Krisuvikurberg (15 transects) SW-Iceland, and Skoruvikurbjarg (15 and 19 transects) , NE-Iceland as well as Hafnaberg, SW-Iceland (total count). These sites were selected because of accessibility and because they are at opposite corners of Iceland, separated by about 600 km along the coast, and they are situated in contrasting oceanographic conditions. In addition, cliffs on Snæfellsnes, W-Iceland, and Drangey, at the north coast, were counted twice, at intervals of 22 and 16 years, respectively.

Three patterns of numerical change emerged. Common murre *Uria aalge* and razorbill *Alca torda* populations were stable or increased slightly from the eighties until about 2000, but in spring 2005 both had decreased considerably, both in the SW and the NE. Changes in the number of kittiwake *Rissa tridactyla* nests were not in phase between regions; in the SW kittiwakes increased during 1985-2005, breeding success was about 0.3 – 1 young per nest, at the NE study site there was a population crash from about 80,000 nests in 1999 to 20,000 in 2005 and breeding success was nearly 0. Two species showed long-term decreases in numbers: After two centuries of spectacular growth, the fulmar *Fulmarus glacialis* breeding population decreased by 2-3 % per annum in both the two main study sites. The thick-billed murre *Uria lomvia* which has probably been declining for most of the second half of the 20th century, declined at all sites by about 7 % per annum. The long-term trends in fulmar and thick-billed murre may be related to long term changes in their food supply.