

Abundance of wintering waterbirds

Scotland's coasts and inland waters are of particular significance for waterbirds. In an international context Scotland's extensive non-estuarine coast is important for waders such as purple sandpiper and turnstone, and its islands and agricultural lowlands for migratory geese. Furthermore, inland waters and estuaries hold substantial numbers of waders and wildfowl in general. There are more than 50 sites of international importance for wildfowl and wader species. Many are long distance migrants, breeding in the high Arctic and wintering in Scotland.



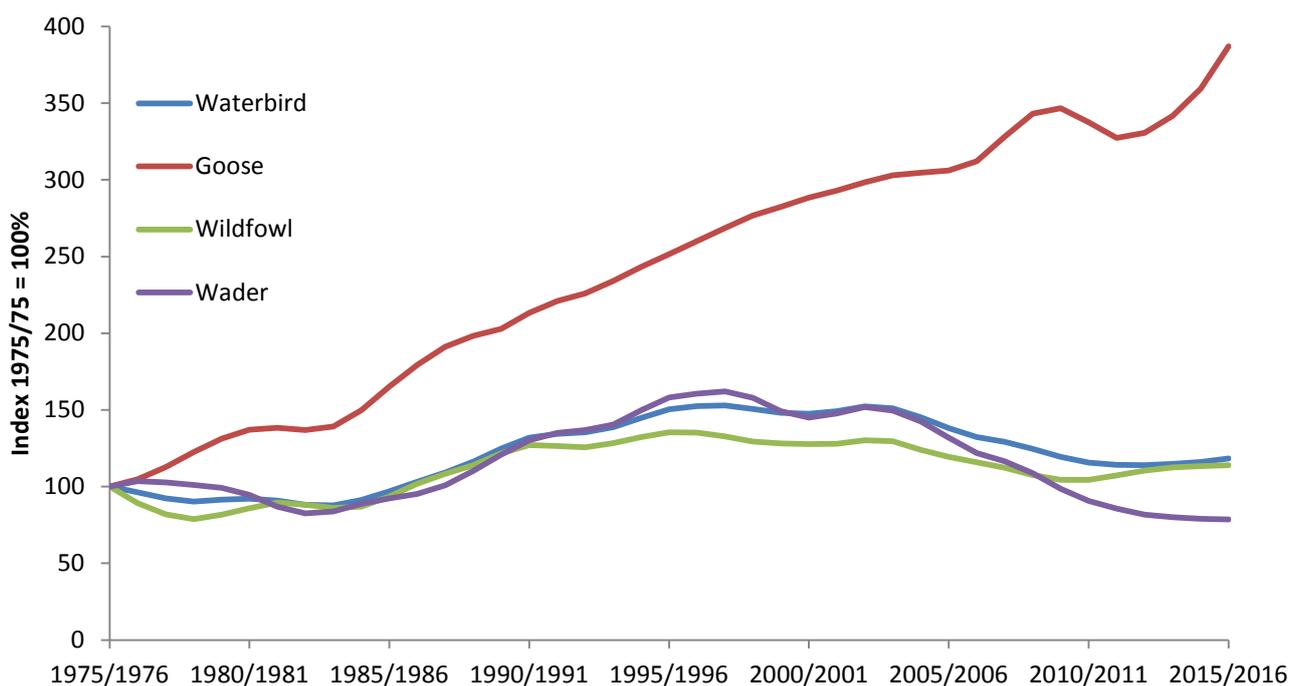
Coot © SNH Images

Evidence

Wintering waterbird populations are monitored primarily through the Wetland Bird Survey (WeBS). The results are used to provide population estimates, determine trends in numbers and distribution, and identify important sites for waterbirds. Since 1975, trends in 41 species of waterbirds (used here to include wildfowl, waders, cormorant, grebes and coot) occurring in Scotland have been monitored.

Abundance of Wintering Waterbirds in Scotland, 1975/76-2015/16

Wetland Bird Survey Results (WeBS)



Assessment

Since counts began in the winter of 1975/76:

- Overall waterbird numbers (41 species/populations) peaked at 153% in 1997/98, then gradually declined. In 2015/16 the indicator was 18% higher than the baseline.
- Goose numbers (7 populations) have increased to 287%
- Ducks and swans (wildfowl) numbers (16 species) increased to 14%.
- Wader numbers (14 species) have declined since 1996/97 and are in 2015/16 21% lower than in 1975/76, the lowest levels on record.

Trend	Waterbirds – Increase Geese – Increase Ducks & Swans – Increase Waders – Decline	Data confidence	High
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Commentary

The waterbird index has fluctuated over time with sustained declines for waders since the late 1990s. The individual species trends reveal a range of fortunes for Scotland's wintering waterbirds.

Waders, as a group, have declined the most, in terms of both the combined trend and the individual species trends. Scotland is in an important position within the East Atlantic Flyway (the migration route used by our waders). Eight species declined – turnstone, ringed plover, redshank, purple sandpiper, dunlin, knot, golden plover and lapwing. Their trends follow a similar pattern, peaking between 1994/95 to 1999/99 then declining from 2002/03. Some species may shift in response to climate change (Rehfishch *et al.*, 2004), with good supporting evidence for knot and dunlin populations being mobile responding to changes in food availability (Conklin & Colwell, 2008). For declining high Arctic breeding waders (turnstone and purple sandpiper) the reasons are not so clear. Summers *et al.* (2012) highlighted breeding success as being a potential driver for purple sandpiper populations. We still lack the crucial research, particularly on our rocky shore waders to understand the factors are driving declines – the latest non-estuarine wader census having shown that turnstones had decreased whereas sanderlings had increased. Three wader species increased – black-tailed godwit, sanderling and grey plover, while wintering numbers of bar-tailed godwit and curlew are currently similar to those in the late 1970s. Our black-tailed godwit are typically from the Icelandic sub-population which are increasing in response to agricultural and climatic change (Gill, *et al.*, 2007), but the increases in Scotland are not at a scale that reverse the large declines that have led to this species being listed as IUCN Near Threatened. Bar-tailed godwits are also Near Threatened; studies have shown that they are highly mobile in winter (Rehfishch *et al.*, 2003), so the trend at a Scotland scale may not reflect what is happening at a broader scale.

The majority of goose populations have increased. Barnacle geese have seen some of the largest increases, with protective legislation and changes in agricultural management helping to improve their fortunes to the degree that management options are now being explored to help reduce emerging conflicts with crop-growers (McKenzie, 2014). In contrast, Greenland white-fronted goose have declined since the late 1990s. This is thought to be due to factors on the breeding grounds including high late-spring snowfall and competition with Canada geese that are spreading northwards into Greenland (Fox *et al.*, 2011). On the wintering grounds, many sites have seen local declines although recent work has shown that some sites are buffered against the overall national trend (e.g. Weegman *et al.*, 2016).

Following a steady decline in numbers of other wildfowl (excluding geese, so ducks and swans) over the decade after the turn of the millennium, there is an early indication that the recovery of more recent winters is beginning to level out. There remain marked differences in the fortunes of the various species. Nine species including, gadwall, teal, shelduck, shoveler, and mute swan, increased over time while six species have declined, with wintering numbers for three species, mallard, scaup and pochard at their all-time low. Among other waterbirds, little grebe and cormorant increased, while numbers of great crested grebe and coot declined.

Source data

The Wetland Bird Survey (WeBS) monitors wintering waterbirds covering all of the major estuaries throughout the UK <http://www.bto.org/volunteer-surveys/webs>. This is complemented by annual results of the WWT/JNCC/SNH Goose and Swan Monitoring Programme and Non-Estuarine Waterbird Surveys undertaken periodically to improve coverage of the coastline outside estuaries. Further information on waterbird trends on protected sites in Scotland can be found at <http://www.bto.org/volunteer-surveys/webs/publications/webs-alerts>

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