

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2005/06

Greenland White-fronted Goose *Anser albifrons flavirostris*

1. Abundance

Coordinated spring and autumn censuses of the Greenland White-fronted Goose were carried out in Great Britain and Ireland for the 24th consecutive winter. Censuses were organised by the Greenland White-fronted Goose Study in Britain and by the National Parks and Wildlife Service in Republic of Ireland and Northern Ireland. The autumn census was carried out during 3-7 December 2005 and the spring census during 18-22 March 2006. A total of 13,609 Greenland White-fronted Geese was recorded in Great Britain in December: seven birds in Britain, 76 in Wales, and 13,526 in Scotland (of which 7,456 were found on Islay), and 14,287 in March: seven birds in England, 84 in Wales, and 14,196 in Scotland (7,111 on Islay). Results for Ireland were available for spring 2006 only, when a total of 10,608 were counted. Regional counts in Britain and Ireland are shown below.

Autumn and spring census counts in Great Britain in 2005/06

Region	Autumn Census	Spring Census
Orkney	102	110
Caithness	338	330
North east Scotland	0	0
Western Isles	191	156
Inner Hebrides	58	60
Lochaber/North Argyll	1,901	2,607
South Argyll	3,056	3,457
Islay	7,456	7,111
Dumfries & Galloway	424	365
Wales	76	84
England	7	7
Great Britain total	13,609	14,287
Wexford	n/a	7,892
Rest of Ireland	n/a	2,716
Ireland total	n/a	10,608
Population estimate	n/a	24,895

Great Britain totals show little change from the previous year; there was a decrease 3.3% on the autumn census total between 2004/05 and 2005/06, and an increase of 1.83% on the spring census total (compare with declines of 19.3% and 14.4% between the autumn and spring censuses of the preceding two years). After a substantial decline in numbers found on Islay in 2004/05 (29.5% decrease in the autumn count, and 25.9% decrease in the spring between 2003/04-2004/05), numbers in 2005/06 have remained similar. Whilst numbers at Wexford have fluctuated between 7000-8000 over the preceding five year period, numbers elsewhere in Ireland have shown a 14% decline since the last available complete spring count in 2002. The spring count in Ireland combined with the Great Britain spring census total provides a global population estimate of 24,895, the lowest spring count since 1988.

2. Breeding success

A total of 8,120 birds was aged across the range during winter 2005/06 and brood size was assessed for a total of 114 families. The overall percentage of young was 8.6% with most wintering sites failing to reach 10% young in the flocks. The percentage of young in areas away from Islay was 8.2%, while Islay yielded an average of 8.9% young. Although the average percentage of young is above that achieved in 2004 (7.8% for Britain in 2004), it still falls far below the 1982-2004 average of 13.3% and 13.5% for those areas away from Islay, and for Islay respectively. Mean brood size was 3.08 with the highest brood sizes recorded on Islay. Average brood size on Islay was similar to 2004 and higher than the 1982-2004 mean, but in areas elsewhere average brood size was lower than the previous season (2.75 in 2004).

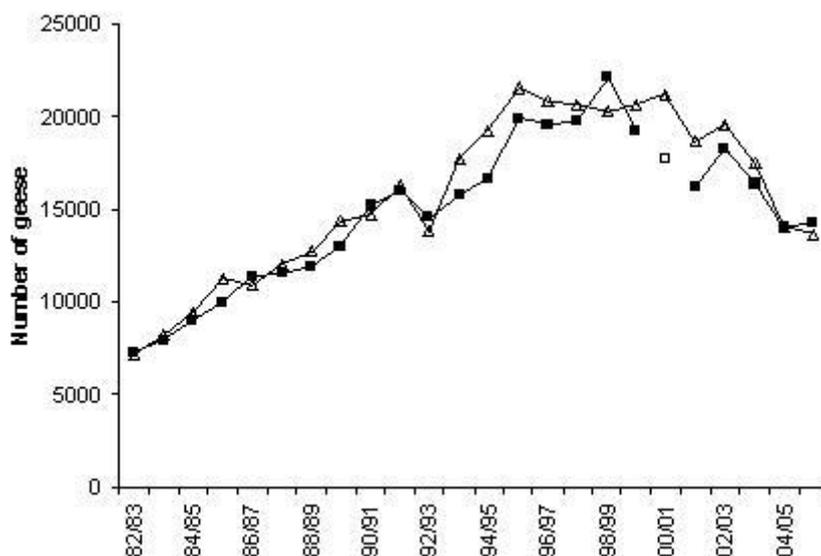
Percentage of young and mean brood size during winter 2004/05

	% young	Mean brood size
Islay	8.9 (13.5)	3.58 (3.27)
Britain excluding Islay	8.2 (13.3)	2.55 (n/a)
Overall	8.6	3.08

Numbers in brackets are 1982-2004 averages.

3. Discussion

Counts in 2005/06 suggest some stabilisation of the downward trend in numbers seen since the late 1990s. Little change occurred in numbers counted on Islay from the previous census and there were signs of a modest recovery in numbers elsewhere.



Counts of Greenland White-fronted Geese in Britain, 1982/83-2005/06, showing autumn (open triangles) and spring (filled squares) census results for each season. Note the missing value for spring 2001 (unfilled square) on account of the outbreak of Foot and Mouth Disease that year (from Fox & Francis 2006).

The trend of poor breeding success in recent years continued in 2005. Such consistently poor productivity, particularly over the last five years, means that the percentage of young produced per year falls below that required to replace annual losses. Despite continuing low breeding success, however, there has been little change in overall numbers between 2004/05 and 2005/06, perhaps as a result of the slightly higher reproductive output in 2005.

The reasons for this continued low breeding success are unclear. The arrival of Canada Geese in west Greenland, however, may be implicated. Data from the breeding grounds in west Greenland indicate that the overall density

of Greenland White-fronted Goose pairs has decreased three-fold since 1999, corresponding to a similar decline in families returning to Islay over the same time period. In addition, fewer non-breeding White-fronted Geese were seen in west Greenland in 2005 compared to 1999, with a 53% decline in density. Again, this decline mirrors that seen in numbers wintering on Islay over a similar time period.

In contrast, Canada Geese, which exhibit behavioural dominance over the Greenland White-fronted Goose, showed a seven-fold increase in density of non-breeding birds since 1999, although the overall density of breeding pairs did not change. Further studies on the spatial relationship and breeding biology of these two species are required to assess any causal linkage between the increase in Canada Goose numbers and a declining Greenland White-fronted Goose population.

The population effects of the recent decision to ban hunting of Greenland White-fronted Geese in Iceland are eagerly awaited. Although hunting was unlikely to be the primary cause of this declining population, this source of mortality accounted for approximately 3,000 birds per annum; an unsustainable level of artificial mortality that together with natural mortality was removing more birds from the population than were being replaced by recruitment of young birds. It is of the utmost importance that changes in numbers, annual breeding success and survival of this population continue to be monitored in order to understand what impact this major change in

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Goose & Swan Monitoring