

# WWT/JNCC/SNH Goose & Swan Monitoring Programme

## survey results 2006/07

### 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 25th consecutive winter. Censuses were organised by the Greenland White-fronted Study in Britain and by the National Parks and Wildlife Service in Republic of Ireland and Northern Ireland.

Totals of 12,271 and 12,536 Greenland White-fronted Geese were recorded in Great Britain in autumn 2006 and spring 2007, respectively. The autumn total comprised of six birds in England, 78 in Wales and 12,817 in Scotland, of which 6,194 were found on Islay. In spring, six were recorded in England, 78 in Wales and 12,452 in Scotland, with 6,025 reported on Islay. Results for Ireland are currently available for the spring census in Wexford only, when a total of 9,713 were counted. Regional counts in Britain and Ireland are shown below.

Autumn and spring census counts in Great Britain in 2006/07

Region	Autumn Census	Spring Census
Orkney	90	94
Caithness	238	319
North east Scotland	1	n/a
Western Isles	213	249
Inner Hebrides	50	70
Lochaber/North Argyll	1,685	2,022
South Argyll	3,386	3,347
Islay	6,194	6,025
Dumfries & Galloway	330	326
Wales	78	78
England	6	6
<b>Great Britain total</b>	<b>12,271</b>	<b>12,536</b>
Wexford	n/a	9,713
Rest of Ireland	n/a	n/a
<b>Ireland total</b>	<b>n/a</b>	<b>n/a</b>
<b>Population estimate</b>	<b>n/a</b>	<b>n/a</b>

Following a slight stabilization of numbers the previous year, there was another decline in the British totals in 2006/07, with decreases of 9.8% and 12.2% on the autumn and spring census totals, respectively, when compared with the previous season. Numbers fell on Islay by 16.9% in autumn and 15.3% in spring, compared with 2005/06. In Wexford, however, numbers were unusually high for recent years, with spring numbers up on the previous season by 23.1%. As counts from the rest of Ireland are not available, it is not possible to provide a global population estimate at this time.

## 2. Breeding success

A total of 5,319 birds was aged across the range during winter 2006/07 and brood size was assessed for a total of 190 families. The overall percentage of young was 10.2% and mean brood size was 3.36 young per successful pair. Although the proportion of young amongst flocks on Islay and in the rest of Britain were higher than the previous year (10.0% compared with 8.9% on Islay; 10.5% compared with 8.2% for the rest of Britain), numbers were still below the 1982-2005 average of 13.3% and 13.0%, for Islay and areas away from Islay, respectively.

The percentage of young varied considerably between wintering sites, ranging from 0-23.6%. Such variation has not been observed amongst flocks before.

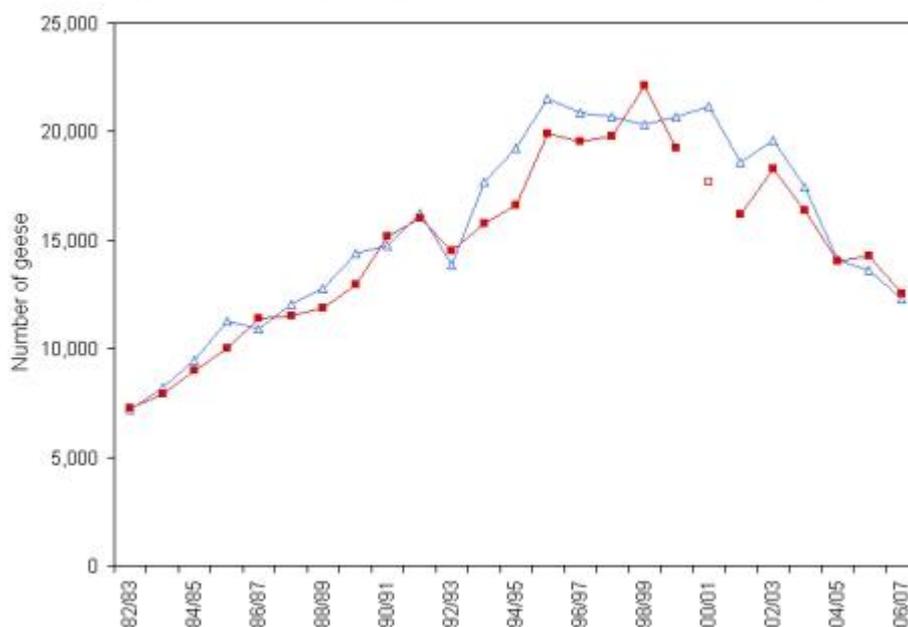
Percentage of young and mean brood size during winter 2006/07

	% young	Mean brood size
Islay	10.0 (13.3)	3.26 (n/a)
Britain excluding Islay	10.5 (13.0)	2.73 (n/a)
<b>Overall</b>	<b>10.2</b>	<b>3.36</b>

Numbers in brackets are 1982-2005 averages.

### 3. Discussion

Counts in 2006/07 indicated numbers in Britain had fallen once again following the slight stabilisation that occurred between the previous two years. Numbers on Islay were lower than in previous years and there were few signs of recovery in numbers elsewhere.



Counts of Greenland White-fronted Geese in Britain, 1982/83-2006/07, 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 2007).

Although breeding success in 2006/07 was the highest recorded since 1998/99, overall numbers in autumn were the lowest recorded since 1987/88, and in spring since 1988/89. Furthermore, whilst there was a slight increase in breeding success compared to recent years it remained relatively poor and below the level required to replace annual losses.

The reasons for this continued low reproductive success remain speculative. The arrival of Canada Geese in west Greenland, however, may be implicated in the decline of reproductive performance of Greenland White-fronted Geese. 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 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 White-fronted Goose population.

The continued decline in 2006/07 is surprising given that it follows the decision, in August 2006, to ban hunting of Greenland White-fronted Geese in Iceland. Until the ban was announced, this source of mortality accounted for some 3,500 birds per annum, so it might be expected that the removal of hunting mortality would have had a greater effect on annual survival and, hence, the overall population size.

Young birds were very much over-represented in the shooting bag so it will take a few years before these birds attain breeding age and recruit into the breeding population. The situation will continue to be monitored to look at the longer-term effects the ban will have on the numbers of Greenland White-fronted Geese. Monitoring of adult annual survival will also continue through the resightings of marked individuals, to see the long-term changes there.

## 4. References

Holt, CA, GE Austin, NA Calbrade, HJ Mellan, C Mitchell, DA Stroud, SR Wotton & AJ Musgrove. 2011. *Waterbirds in the UK 2009/10: The Wetland Bird Survey*. BTO/RSPB/JNCC. Thetford.

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# Goose & Swan Monitoring