

# WWT/JNCC/SNH Goose & Swan Monitoring Programme

## survey results 2007/08

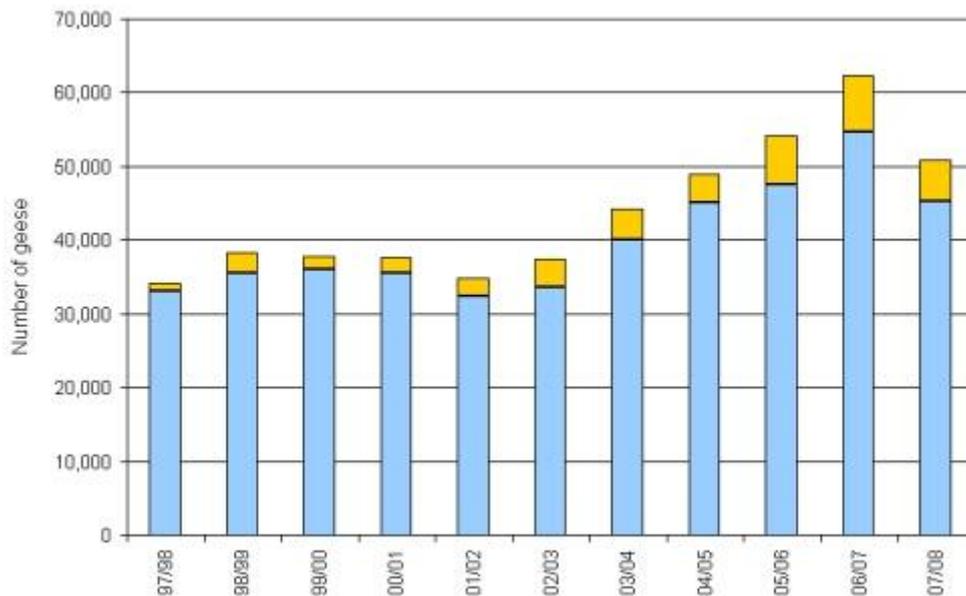
### Greenland Barnacle Goose *Branta leucopsis*

## 1. Abundance

A full census to estimate the size of the Greenland population (International Greenland Barnacle Goose Census) was undertaken in spring 2008. The most important areas for Greenland Barnacle Goose in Scotland include Argyll, the Uists and South Walls, Orkney.

### *Argyll*

In addition to the international census in March 2008, count data were collected in Argyll in December 2007 by Scottish Natural Heritage (SNH). Overall numbers during winter 2007/2008 were the third highest recorded by this survey, reaching a maximum of 50,887 in March, 2008, a decrease of 18.3% since the preceding year (see Discussion).



Numbers of Greenland Barnacle Geese counted in Argyll (blue section = Islay, orange section = other sites) 1997/98-2007/08 (SNH data/WWT census).

The highest winter count on Islay was 44,961 birds in March 2008. This was some 6,524 birds fewer than the peak of 51,485 birds counted in March 2007 (see Discussion). Away from Islay, large numbers were also recorded at a number of other sites. Counts on Oronsay peaked at 1,200 in March 2008, although this was some 700 birds fewer than the peak recorded in 2006/07. On Tiree, numbers peaked at 3,393 in March 2008 some 930 birds fewer than the peak of 4,323 recorded in March 2007. On Coll, 800 birds were recorded in December 2007, again, some 1,656 birds fewer than the peak of 2,456 recorded in March 2007.

Numbers of Greenland Barnacle Geese in Argyll during 2007/08.

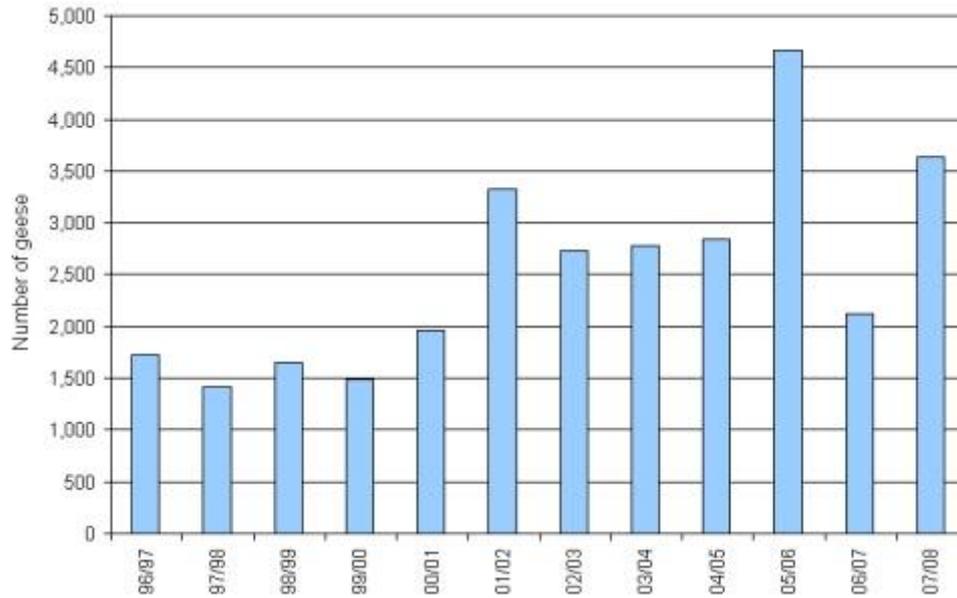
Location	December 2007	March 2008
Laggan	59	33
Danna/Keills Peninsula	341	711
Luing	-	113
Mull/Treshnish Isles	-	197
Coll	800	167
Tiree	3,188	3,393
Muck	-	102
Colonsay	1	-
Oronsay	1,108	1,200
Islay	44,237	44,961
<b>Total</b>	<b>49,734</b>	<b>50,887</b>

#### *Uists*

Greenland Barnacle Geese were counted in the Uists in February 2008 as part of the coordinated counts organised by the Uist Greylag Goose Management Committee and in mid-March 2008 as part of the international census. The combined total of 3,632 geese in February 2008 was the second highest count since 1997. In mid-March 2008, a combined total of 2,850 geese was recorded

Numbers of Greenland Barnacle Geese in the Uists in February 2008.

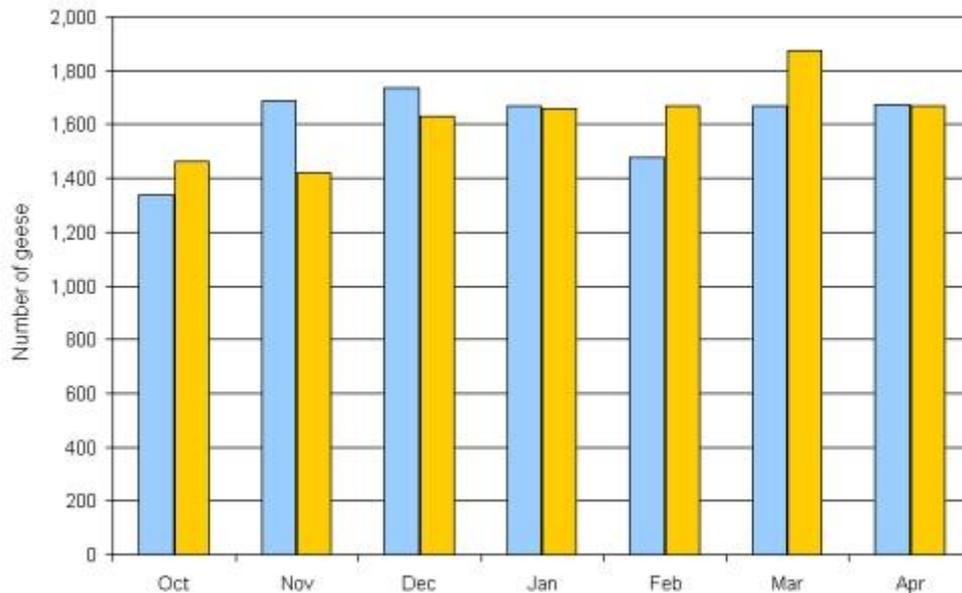
Location	No. of geese
North Uist: Baleshare/Carinish	12
North Uist: Clachan to Bayhead	400
North Uist: Paible	310
North Uist: Balranald, Clettraval & Tigharry	571
North Uist: Malaclate to Grenitote	824
North Uist: Oronsay	138
North Uist: Trumisgarry to Newton	9
North Uist: Berneray	1,116
North Uist: Boreray & Lingay	250
North Uist: Pabbay & Shillay	not counted
South Uist: Howbeg to Bornish	2
<b>Total</b>	<b>3,632</b>



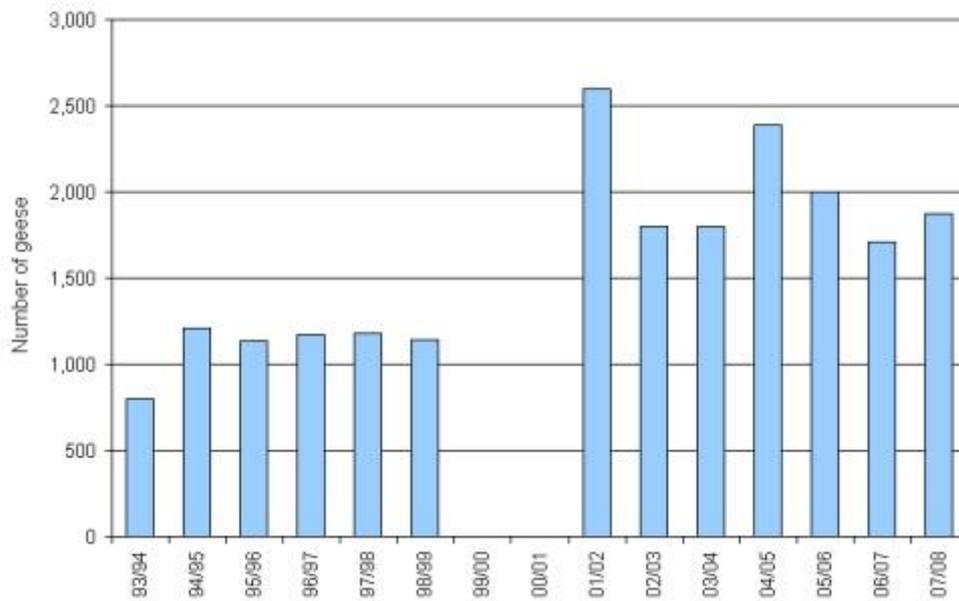
Numbers of Greenland Barnacle Geese in North Uist during coordinated February goose counts, 1996/97-2007/08. Note: two areas in 2007 and one area in 2008, were not surveyed.

*South Walls, Orkney*

Monthly count data were collected by SNH throughout winter 2007/08 as part of the South Walls Goose Management Scheme. The peak count was 1,874 geese, in March the peak mean over the previous five years (2002/03-2006/07) was 1,940 ( $\pm 122$  s.e.).



Peak monthly counts of Greenland Barnacle Geese at South Walls, Orkney (blue columns represent the mean of 2002/03 -2006/07; orange columns 2007/08).



Peak annual counts of Greenland Barnacle Geese at South Walls, Orkney, 1993/94-2007/08. Note: no data are available for 1999/2000 and 2000/01.

## 2. Breeding success

### 2006/07

On Islay, 16,967 birds were aged during November and December. The sample aged is thought to be approximately 37% of the early winter total. The percentage of young in flocks showed an overall mean of 3.18%. A total of 268 families was assessed for brood sizes. Of these, 85% contained one juvenile, 15% contained two young and only two brood of three were recorded. No broods larger than three were observed. The mean brood size showed an overall mean of 1.16 goslings.

On Tiree in November, the overall percentage of young birds in a flock of 300 birds was 4.3%, slightly higher than the overall mean of those flocks on Islay. Of 12 broods assessed, 92% contained one juvenile and 8% held two young. No broods larger than three were observed. The average brood size was 1.08 goslings.

The proportion of young and mean brood size of Greenland Barnacle Geese during winter 2006/07.

	No. of geese aged	No. of young	% young	Mean brood size
Islay	16,967	539	3.2	1.16
Tiree	300	13	4.3	1.08
Total	17,267	552	3.2	1.16

**2007/08**

On Islay, 14,220 birds were aged during November and December. The sample aged is thought to be approximately 31% of the early winter total. The percentage of young in flocks showed an overall mean of 9.8%. A total of 444 families was assessed for brood sizes. Of these, 22% contained one juvenile, 45% contained two young, 30% contained three young and 3% contained four young were recorded. No broods larger than four were observed. The mean brood size showed an overall mean of 2.14 young per successful pair.

On Tiree in November, the overall percentage of young birds in a flock of 200 birds was 9.0, slightly lower than the overall mean of those flocks on Islay. The average brood size was 1.38 young per successful pair.

The proportion of young and mean brood size of Greenland Barnacle Geese during winter 2007/08.

	No. of geese aged	No. of young	% young	Mean brood size
Islay	14,220	1,394	9.8	2.14
Tiree	200	18	9.0	1.38
<b>Total</b>	<b>14,420</b>	<b>1,412</b>	<b>9.8</b>	<b>2.12</b>

### 3. Discussion

The 2008 population census, conducted primarily between 16-18 March 2008, surveyed a total of 328 islands and mainland sites along the west and north coasts of Scotland and Ireland. In Scotland, 40 sites were found to hold 58,269 geese. The total wintering population, including 12,232 counted in Ireland, was estimated at 70,501 birds. This represents a 25.0% increase on the 2003 population census total.

Growth of numbers on Islay has increased in recent years. An increase of 23.3% has occurred since the survey of spring 2003 compared to a previous increase of 3.7% from 1999 to 2003. Likewise, numbers of geese throughout the remainder of Scotland have increased by 23.5% compared with 7.9% between the surveys of 1999 and 2003.

Several key sites hold the majority of geese. A comparison of the number of occupied sites in each of the census years indicates that the number of occupied sites in 2008 was higher than in any previous year. In Scotland, combined numbers at the key sites have undergone a continued high rate of increase, whereas numbers at outlying sites have stabilised following an initial increase up to the early 1970s.

However, counts in 2007/08 indicates an apparent decrease in the size of the Scottish wintering population compared to the previous year. The mid-winter count on Islay, carried out in December 2006 found 47,053 Barnacle Geese, some 4,432 fewer than recorded in March 2007. It is probable that the late March 2007 count was an overestimate. Less likely was that the count contained birds that had started spring passage, although it is hard to know where these birds may have come from. The only flocks further south than Islay are in west Ireland, and recent evidence from satellite tracking show that tagged Barnacle Geese make a direct movement from west Ireland to Iceland during spring migration (not via sites in Scotland) (L. Griffin pers. comm.).

On Coll, the count in December 2006 was 1,415 birds, some 1,041 geese fewer than the count of 2,456 geese recorded on 25/26 March 2007, some 8-9 days later than the count on Islay. On Tiree, the spring 2007 count (4,323 birds) was carried out on 22/23 March some 2-3 days later than on Islay was also higher than regular counts recorded throughout the winter (by c. 2,500 birds). The presence of newly arrived colour ringed birds seen on Tiree in late March, that had been recorded on Islay during the winter, suggests that by that time, Barnacle Geese had started spring passage within Scotland. It is, therefore, likely that the large numbers recorded on Coll and Tiree contained birds on spring passage, probably from Islay. However, regular counts through winter 2006/07 indicate that c. 1,415-2,456 birds were present on Coll that winter and the decline on that island in winter 2007/08 (maximum count 167 birds) was real.

Age assessments conducted during 2006/07 indicate that 2006 was a poor breeding season, as was 2005 (6.56% young). The proportion of young (3.2%) was well below that of the most recent 10-year mean (8.9%,  $\pm$  1.1 s.e.) and the mean brood size was the lowest recorded during the most recent ten years (1.16 young per successful pair). Results from age counts undertaken in 2007/08 show that breeding success in 2007 was average; the

proportion of young (9.8%) and mean brood size (2.12) were both slightly higher than their respective 10-year mean ( $9.3\% \pm 1.2$  s.e. and  $1.96 \pm 0.1$  s.e. respectively).

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## Goose & Swan Monitoring