

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2011/12

Greenland Barnacle Goose *Branta leucopsis*

1. Abundance

A full census to estimate the size of the Greenland population was last undertaken in spring 2008 (International Greenland Barnacle Goose Census), however, in winter 2011/12, counts were made at seven of the most important areas for Greenland Barnacle Goose in Scotland, which in spring 2008 (the last complete census) contributed 92.5% of the total count in Scotland, included:

Islay: Two comprehensive counts are organised on Islay by Scottish Natural Heritage (SNH) each winter. The peak coordinated count of 46,412 in March 2012 was 3.5% higher than the peak in the previous winter. The Islay population size is estimated from the mean of the December and March counts (where emphasis is placed on obtaining greatest coordinated coverage) and in winter 2011/12, this figure was 44,503.

Tiree & Coll: Greenland Barnacle Geese were counted on Tiree and Coll by RSPB Scotland. The winter peak on Tiree was the highest ever winter count on the island at 4,295 birds; 2.5% higher than the previous winter. On Coll, the winter peak was 809 birds, 4% higher than the peak in the previous winter, and 64% lower than the highest ever count of 2,264 birds in winter 2006/07.

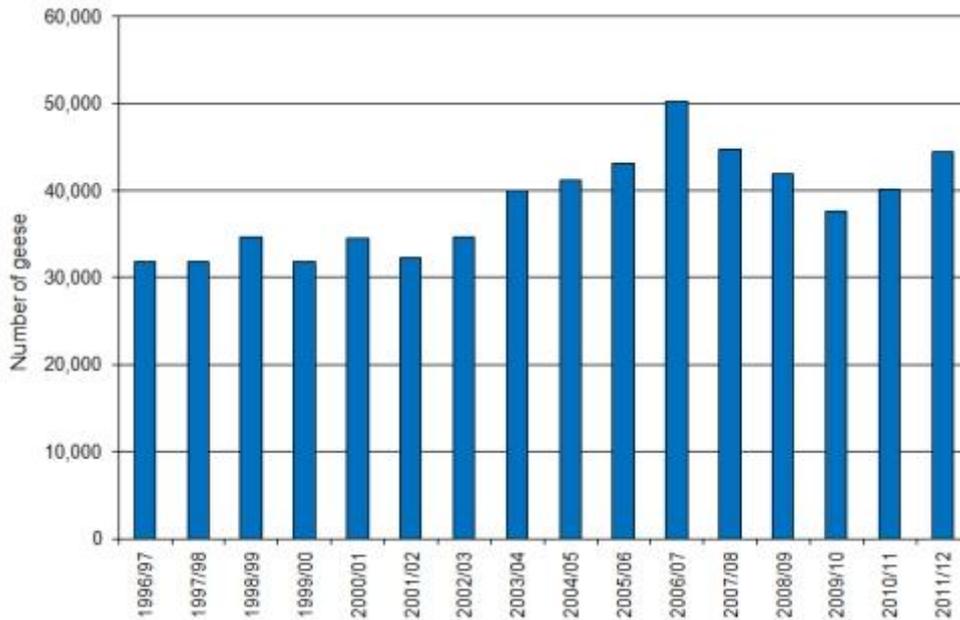
Uists: Greenland Barnacle Geese were counted in the Uists in February 2012 as part of the coordinated counts organised by the Uist Greylag Goose Management Committee. The combined total of 3,719 geese was 46% higher than the peak in the previous winter, but 20% lower than the the highest count of 4,659 birds in winter 2005/06.

South Walls, Orkney: Monthly count data were collected by SNH throughout winter 2011/12 as part of the South Walls Goose Management Scheme. The peak count was 1,932 geese in January. This figure was 3.8% higher than the peak in the previous winter although 19.2% lower than the highest ever count of 2,390 birds in winter 2004/05.

Danna: The peak winter count on Danna in the Inner Hebrides during 2011/12 was 532 birds, some 25.6% lower than the peak in the previous winter.

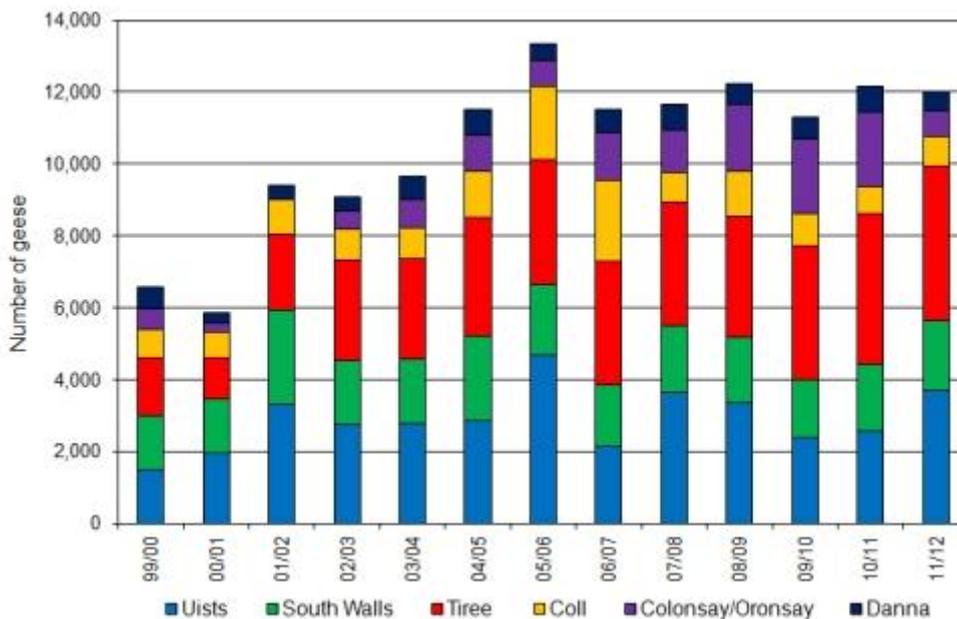
Colonsay/Oronsay: Regular winter counts on Colonsay/Oronsay are organised by RSPB Scotland. In winter 2011/12, the peak winter count was 740 birds, 64% lower than the count in the previous winter.

Since complete censuses of the entire population are carried out only once every five years, tracking the trend at seven of the most important sites is thought to reflect changes at the population level.



Adopted counts (mean of the two winter counts) on Islay, the most important wintering site for Greenland Barnacle Geese, 1996/97-2011/12.

The highest adopted count of Greenland Barnacle Geese on Islay recorded in 2006/07 (50,232 birds) and, for the next three winters, there was a reduction in the number counted there to a low of 37,637 birds in winter 2009/10. However, in winter 2010/11 this number increased again, to 40,252 birds and in winter 2011/12 increased again to 44,503 birds. Both 2010 and 2011 were reasonable breeding seasons (see below). Elsewhere, the combined counts from six other important sites show a broadly similar trend; a peak count in winter 2005/06 followed by a decline with a modest increase in numbers in winters 2010/11 and 2011/12. Note that peak numbers occurred on Islay (in 2006/07), and at the other key sites in Scotland (in 2005/06), before the most recent population census which was in winter 2007/08.



Winter peaks at six of the most important wintering sites for Greenland Barnacle Geese in Scotland, 1999/2000-2011/12.

2. Breeding success

On Islay, 7,820 birds were aged during November and December 2011. The sample is thought to be approximately 18% of the early winter total. The percentage of young in flocks showed an overall mean of 11.2%. This suggests that 2011 was a reasonable breeding season in east Greenland and is similar to that in the previous year (2010) and the highest percentage young since 15.9% was recorded in 2004/05. A total of 135 families was assessed for brood sizes. Of these, 17.7% contained one juvenile, just over a half (57.0%) contained two young, 18.5% contained three young and 6.6% contained four young. The overall mean brood size was 2.1 goslings per successful pair.

On Tiree in November, the overall percentage of young birds in a total of 275 birds aged was 5.1%, half that recorded on Islay. Of 13 broods assessed, the mean brood size was 1.07 goslings.

The proportion of young and mean brood size of Greenland Barnacle Geese during winter 2011/12.

	No. of geese aged	% young	Mean brood size
Islay	7,820	11.2	2.1
Tiree	275	5.1	1.07
Total	8,085	10.99	2.01

3. Discussion

Several key sites in Scotland hold the majority of Greenland Barnacle Geese with most of these wintering on Islay. Combined numbers at the key sites, including Islay, underwent a sustained increase up to 2006/07, however, counts in the following three winters indicate an apparent decrease in the size of the Scottish wintering population compared to the peak year, followed by a slight increase again in winters 2010/11 and 2011/12. Annual breeding success has been low in the last ten years (see below) and this is undoubtedly an important part of this decrease in abundance. In addition, c. 1,000-1,500 Greenland Barnacle Geese are shot in Iceland each year and licences to shoot c. 1,000 on Islay have been issued by the Scottish Government in recent years.

It has been suggested that an increase in disturbance on Islay in recent years due, in part, to the lethal scaring programme may have led to a redistribution of Greenland Barnacle Geese within Scotland and possibly to Ireland. However, peak winter counts from six of the other most important sites in Scotland fail to back this up, and indicate that numbers decreased at those sites too before increasing slightly again in the most recent winters.

Thus, mortality through hunting/control and low breeding success appeared to have halted the long term increase. However, reasonable breeding seasons in 2010 and 2011 appear to have reversed this very recent decline. The next international census is due in late winter 2012/13 and will give the opportunity to determine whether this trend is representative of the entire population.

Results from age counts conducted during 2011/12 on Islay (from where the largest sample is provided) show that the 2011 breeding season was reasonable; the figure of 11.2% young recorded being higher than the previous 10-year mean of 8.9% (± 1.3 SE) and the same as that recorded in 2010. Since 2002, annual breeding success has been below 10% in six out of the ten years. Mean brood size in 2011 was also average at 2.1 young per successful pair, and slightly higher than the previous 10-year mean of 1.92 young (± 0.1 se).

The results from age counts carried out on Tiree showed a lower productivity estimate than that recorded on Islay, although the Tiree sample size was small.

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Goose & Swan Monitoring