

WWT/JNCC/SNH Goose & Swan Monitoring Programme  
 survey results 2013/14  
 Svalbard Barnacle Goose *Branta leucopsis*

1. Abundance

The adopted total for this population wintering on the Solway in 2013/14 was 38,100 geese (the mean of five counts that were within 10% of the maximum of 38,885 recorded, rounded up to the nearest 100), this represents an increase of 23% (7,100 birds) on last winter's adopted total of 31,000 geese (Figure 1).

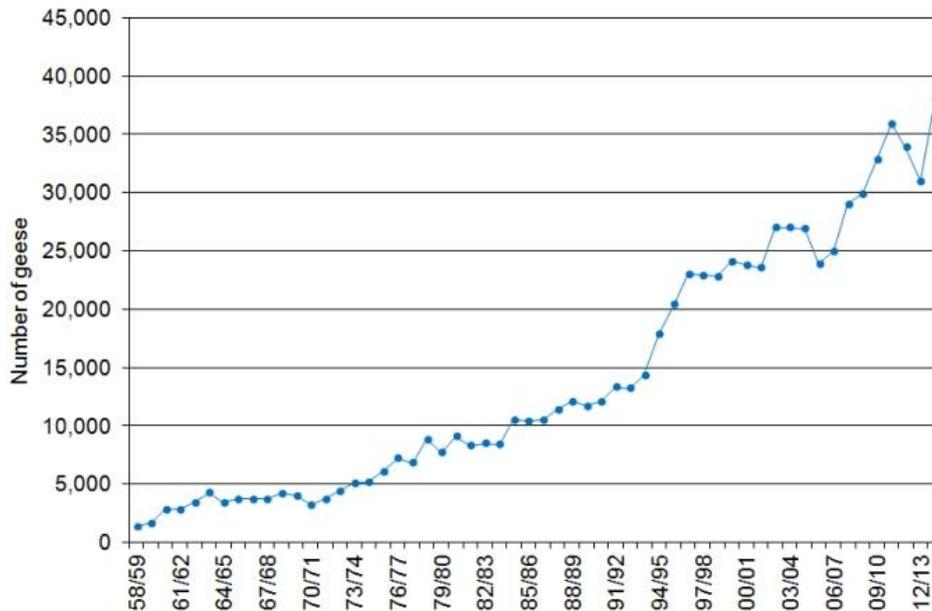


Figure 1. Annual census-derived estimates of Svalbard Barnacle Goose population size, 1958/59-2013/14.

The first three possible Svalbard birds were recorded on Newmains Farm, Caerlaverock on 19 September, but numbers never rose above seven until 26 September when 370 birds were recorded at Caerlaverock. Total population counts of Svalbard Barnacle Geese were slow to build up with less than 2,000 geese recorded on the whole Solway by 9 October. Numbers then built fairly steadily up to the end of October, when over 30,000 birds were present on the Solway Firth and continued to increase to over 37,000 by mid November. Numbers did not fluctuate as much as in previous winters and a fairly constant 36,000 to 38,900 was recorded from 13 November 2013 to 22 April 2014 during five censuses. This consistency in the counts was perhaps due to the constancy of the weather during the winter. Very few episodes of freezing conditions were recorded and so it was felt that the geese did not spread out across the Solway Firth as much as usual due to food resources being largely maintained. The first sign of spring migration was witnessed on 27 April when numbers across the Solway dropped to nearly 27,000 birds. Up to 13,000 Barnacle Geese remained on Rockcliffe Marsh until mid May 2014.

Due to count variation, with possible inaccuracies and the chance of double-counting, an adopted count total for the population was derived by averaging those counts within 10% of the maximum recorded during the winter. In 2013/14, the counts of 37,419 on 13 November, 38,876 on 11 December, 38,852 on 11 February, 36,018 on 25 March and 38,885 on 22 April (the maximum count recorded), met this criterion and were thus averaged to produce an adopted population total of 38,100 Barnacle Geese (rounded up to the nearest 100). This figure was 23% higher than the population estimate of 31,000 geese in 2012/13.

## 2. Breeding success

The breeding success of Svalbard Barnacle Geese sampled on the Inner Solway Firth from October 2013 to December 2014 ranged from 2.0% to 30.8% (*c.f.* 0.8% to 15.0% in 2012/13), with a mean of 7.0% young from 14 flocks with 10,135 geese sampled (*c.f.* 5.5% in 21 flocks, with 12,372 geese sampled in 2012/13) (Figure 2). Across the same area, the total number of broods sampled was 80, with a mean family size of 1.98 goslings, ranging from 1–4 goslings (*c.f.* 1.6 goslings,  $n = 172$  and a range 1–5 goslings in 2012/13).

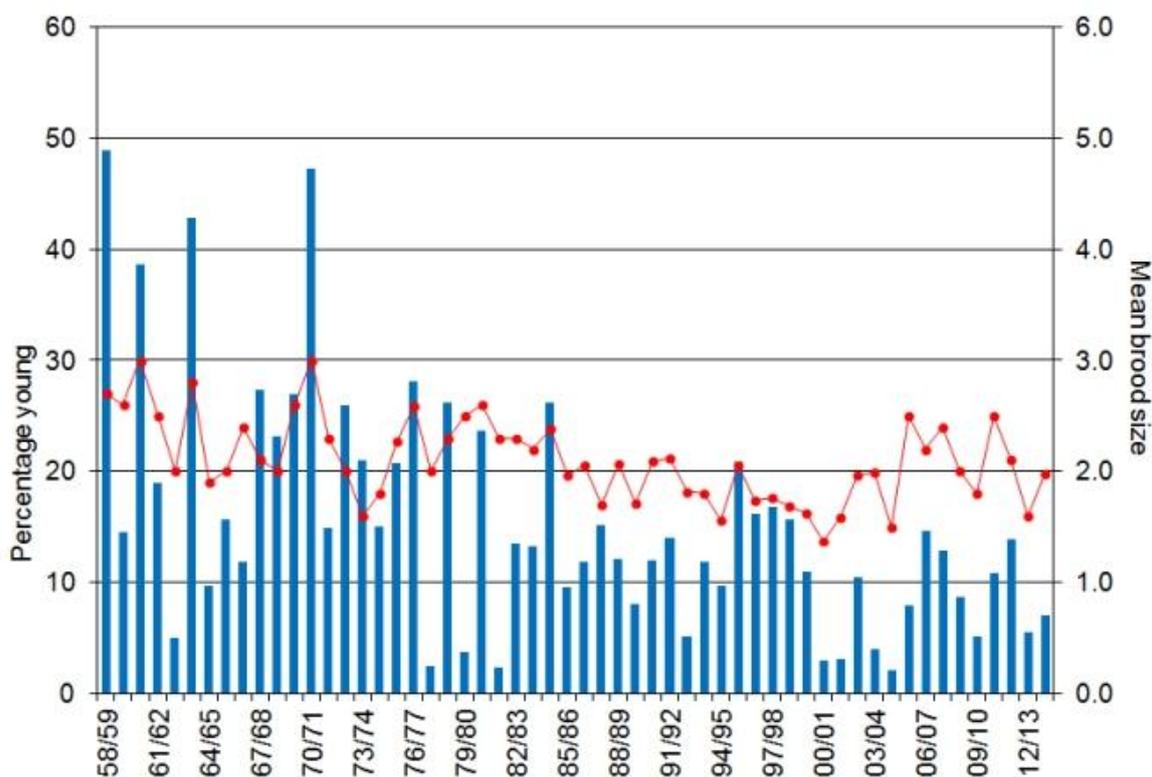


Figure 2. The mean percentage of young (blue columns) and mean brood size (red circles) of Svalbard Barnacle Geese, 1958/59–2013/14.

## 3. Discussion

As the population of Svalbard Barnacle Geese has increased, so has its distribution on the Solway Firth, although its core feeding areas remain broadly the same. Rockcliffe Marsh, at the eastern end of the Solway Firth, continues to play a vital role throughout the winter, with its importance further highlighted in late April/early May during a period of rapid turnover. Virtually the whole population will visit the site for up to a week or more to feed on the newly accreted saltmarsh vegetation before departing for staging grounds in Norway or Svalbard. Rockcliffe Marsh is currently in a phase of rapid growth on its seaward edge, as it has been for the last decade, and is probably supporting increasing numbers of geese each year. This, coupled with an expanding distribution on the Solway Firth more generally, makes it more and more difficult to achieve rigorous population counts with the coordinated weekly or fortnightly ground counts that have historically been used. As Rockcliffe Marsh expands it becomes increasingly difficult to cover the ground (safely) on foot and make accurate assessments of goose numbers without disturbing the geese and thus risking double counting. As a result, the possibility of undertaking aerial counts with high definition photography of the flocks was explored, but has so far not proved possible with an unmanned aerial vehicles (drone) due to the tendency for flocks to move during the period of time it takes to survey this large area.

There is also an increasing tendency for a proportion of the birds to stay longer on the Solway Firth, particularly on the saltmarsh at Rockcliffe Marsh, Cumbria, and especially on the newly accreted marsh vegetation in that tidal area at the eastern end of the Solway. This marsh is now

acting as a spring pre-migration site as well as a wintering ground for over a quarter of the population in most years up to, and sometimes beyond, the middle of May.

This report should be cited as:

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## Goose & Swan Monitoring