

WWT/JNCC/NatureScot Goose & Swan Monitoring Programme survey results 2019/20

Svalbard Barnacle Goose *Branta leucopsis*

1. Abundance

The adopted total for the Svalbard Barnacle Goose population wintering on the Solway Firth in 2019/20 was 36,000 geese (the mean of the maximum count of 37,360 and one other count within 10% of this, rounded up to the nearest 100 birds). This represents a decrease of 4,400 birds on last winter's adopted total of 40,400 geese (Figure 1).

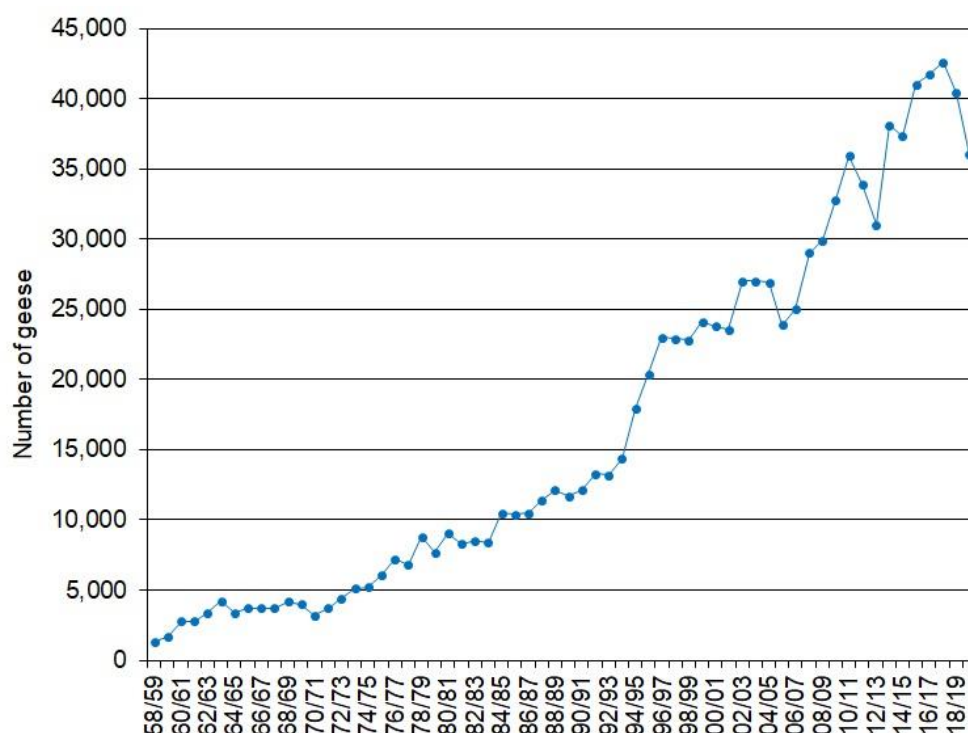


Figure 1. Annual census-derived estimates (for the Solway Firth only) of the Svalbard Barnacle Goose population size at the Solway Firth 1958/59–2019/20.

The first arrival of Barnacle Geese thought to be genuine migrants from Svalbard was a flock of six recorded on the saltmarsh at WWT Caerlaverock on 20 September 2019, with 940 on the saltmarsh by 24 September. It is known from past years that ringed birds from small feral flocks at Loch Leven and the Highland Wildlife Park can be present throughout the winter on the Solway and that birds over-summering in Cumbria can also be present. These birds, that can look like they are in moult and thus have a rather scruffy appearance, can turn up early to the Solway in small numbers and their numbers on the Solway throughout the winter probably total less than 500. As with 2018, goose numbers built up very rapidly on the Solway in 2019 with at least 31,600 present by 2 October, with 13,750 of those in the Caerlaverock area. A further 3,000 geese had been recorded as part of further influxes to the Solway by 23 October 2019.

Census counts from 2 October to 13 November were hampered in one eastern section on the north side of the Solway from Brow Well to Gretna due to the collapse of a key road bridge after flood conditions. This meant that not only could the geese in the Thwaite, Ruthwell and Cummertrees areas not be counted, but

also the northern part of Rockcliffe Marsh in Cumbria could not be covered. The situation returned to normal when the bridge was re-opened at the end of November and two census counts were then completed before the counts across all sections were suspended for the rest of the winter under the COVID-19 travel restrictions. The impression from the incomplete census counts was that there were less birds on the Solway than in winter 2018/19, especially as the count areas that could not be covered often do not contain a significant number of geese in the early part of the winter. This was confirmed when a full census count covering all sections was completed on 5 February 2020 when 37,360 geese were counted, the peak for the season.

Significant numbers of birds again staged/wintered on the east coast at Budle Bay, Northumberland with an estimated 4,000 birds there on 9 October 2019 (the same estimate as on 8 October 2018) dropping to a more sustained 1,800 to 2,000 for the rest of the winter until 5 February when 2,500 were counted; this increase from the 1,800 recorded on 4 December was thought to coincide with the timing of the movement of a GPS tagged bird from the Solway back to that area between 30 January and 1 February, suggesting a mid-winter influx to Budle Bay of birds moving north-east from the Solway. By 14 March, numbers had dropped back to about 1,600 coinciding again with the movement of the tagged bird back to the Solway on 15 March, with only 250 geese being recorded in Budle Bay area on 18 March and none thereafter (Derek Forshaw pers comm). The drop in numbers coupled with the movement of the tagged bird strongly inferred that the birds had moved to the Solway but with the suspension of counts in March this must remain speculation.

Due to count variation, with possible inaccuracies and the chance of double-counting, an adopted count total for the Solway population is derived by averaging those counts within 10% of the maximum recorded during the winter. In 2019/20, the counts of 37,360 on 5 February 2020 and 34,516 on 23 October 2019 fulfilled this criterion (albeit the count of 23 October did not cover all count sections) and were thus averaged to produce an adopted Solway population total of 36,000 Svalbard Barnacle Geese (rounded up to the nearest 100; *c.f.* 40,400 in 2018/19). Therefore in terms of peak counts or adopted counts there has been a decline in the population total on the Solway for the last two years. This conclusion remains unchanged if the Budle Bay counts are added to the Solway total for the last three years.

2. Breeding success

The breeding success of Svalbard Barnacle Geese sampled on the Solway Firth from October 2019 to November 2019 ranged from 0.7% to 14.6% young (*c.f.* 0% to 11.2% in 2018/19) with a mean of 5.2% young derived from 14 flocks with 10,111 geese sampled (*c.f.* 6.3%; *n* = 19 flocks; 10,829 geese sampled in 2018/19) (Figure 2). Across the same area, the total number of broods sampled was 121, with a mean family size of 1.6 young, ranging from 1-4 young (*c.f.* 1.7 young; *n* = 151 broods; range 1-6 young in 2018/19).

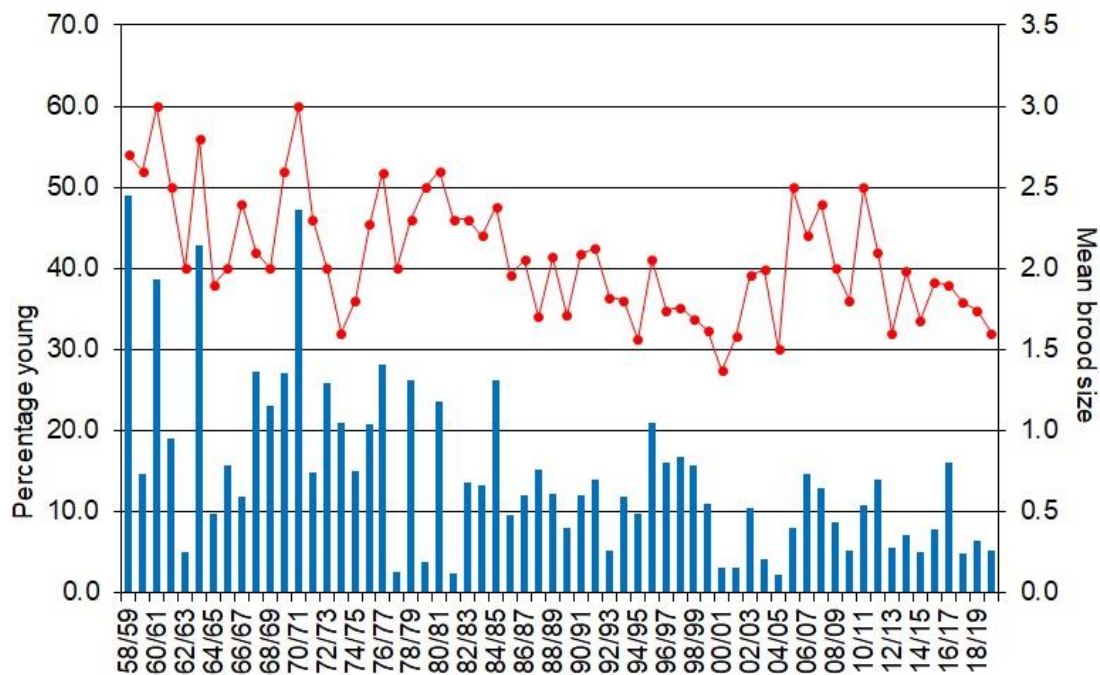


Figure 2. The mean percentage of young (blue columns) and mean brood size (red circles) of Svalbard Barnacle Geese at the Solway Firth, 1958/59–2019/20.

3. Discussion

With the adopted count of 40,400 in 2018/19 representing a moderate decrease in the Solway population of Barnacle Geese that had formerly stabilised, the further larger decrease apparent in 2019/20 to the adopted total of 36,000 suggests a downward trend in the short-term; however, this matches expectations to an extent because of the run of poor breeding seasons over the last eight years (except for 2016) at, or about, 5.0% young, thus resulting in an increasingly aged population structure.

The counts for the Solway were not consistent and not totally comparable between dates as it was not possible to cover all count sections due to access difficulties at the start of the season.

WWT has always reported annually on the numbers of Barnacle Geese wintering on the Solway because traditionally this was believed to be the wintering grounds for virtually all of the Svalbard population in most years after the initial arrival period. In some years groups of birds have lingered at east coast sites from Loch of Strathbeg to the Humber, but mostly either the numbers at these sites fell away or the birds were thought to be of mixed origins. However, again this winter, a substantial proportion of the population has short-stopped in the Budle Bay area, Northumberland. Based on the timings of this population build up at Budle Bay in relation to visual migration activity down the coast of Norway in autumn and the coincident build-up of numbers at Caerlaverock, the presence of leucistic birds at Budle Bay and the numbers of rings of Svalbard origin being recorded there, even if just based on the colours of the leg-rings with codes not being read due to the tricky terrain, it seems highly likely these birds are ~100% Svalbard in origin.

Of course it might only take a harsher east coast winter or two to change this trend, as in March 2018 when the “beast from the east” seemed to dislodge these birds and push them to the Solway, but at present it is useful to report on numbers there separately to the Solway population so that different population metrics can be established which can be used going forward as well as being compatible with reported historical counts which have always been based solely on the Solway WWT counts. The peak count for

the *flyway* population across the Solway *and* Budle Bay sites on 5 February 2020 was 39,860. Any backward calculation of historical flyway totals would have to take account of WeBS counts for this, and possibly other, east coast sites to be comparable with the population total given here.

Up until at least the first week of February 2019, up to 2,500 Barnacle Geese were still staging/wintering at Budle Bay with at least 4,000 originally having stopped there on 9 October 2019. By 14 March 2020 numbers had dropped to about 1,600 with only 250 present by 18 March and none thereafter. As with the 2019 exodus from that area there was no obvious climatic cause for the decline in numbers in spring 2020 but the movement of the GPS tracked bird back to the Solway infers others may have moved southwest to the Solway.

4. Acknowledgements

Many thanks to the Solway census team and to the counter at Budle Bay for sending us their observations.

This report should be cited as:

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Goose & Swan Monitoring