

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

Iceland Greylag Goose *Anser anser*

1. Abundance

The 60th consecutive Icelandic-breeding Goose Census (IGC) took place during autumn and winter 2019, providing information on the abundance and distribution of Iceland Greylag Geese. A full account of the census can be found in Brides *et al.* (2020).

A network of volunteer observers and professional conservation staff conducted counts over the weekend of 23/24 November.

Coverage was excellent across the range, with 166 sites checked (compared with 150 in 2018). Outside of Britain, counts were made at several sites in Iceland, Faroes, Ireland and Southwest Norway. Counts in Norway took place in January rather than November, but the total from these counts was used as an estimated count for the November period since guidance from counters in Norway suggests that the winter influx of Icelandic migrants occurs in late October and early November and they remain there throughout the winter (A Follestad. pers. comm.).

The total count was 101,235 Greylag Geese (Table 1). Following adjustments for the presence of British/Irish Greylag Geese, which is significant in some areas, a population estimate of 73,355 was derived. This represented an increase of 25.6% compared to 2018 (Figure 1), when a population of 58,426 was estimated.

By November, just under three-quarters of the population (72.5%) were found in North Scotland, primarily on Orkney, with 22.5% present in Iceland, 3.0% in Ireland, 1.6% in Northeast Scotland and 0.1% in Southwest Scotland/Northwest England (Table 1). A small percentage (0.4%) of the population was also located in Norway.

Table 1. Regional distribution of Iceland Greylag Geese during November 2019.

Region	November
Iceland	16,500
Southwest Norway	267*
Faroe Islands	689
Ireland	3,341
North Scotland	72,913
Northeast Scotland	1,251
East Central Scotland	1,874
Southeast Scotland/Northeast England	3,574

Region	November
Southwest Scotland/Northwest England	593
West England	2
East England	231
<i>Total counted</i>	101,235
<i>Adjusted counts</i>	-27,880
Population estimate	73,355

*Count made in January 2020 (see Brides *et al.* 2020)

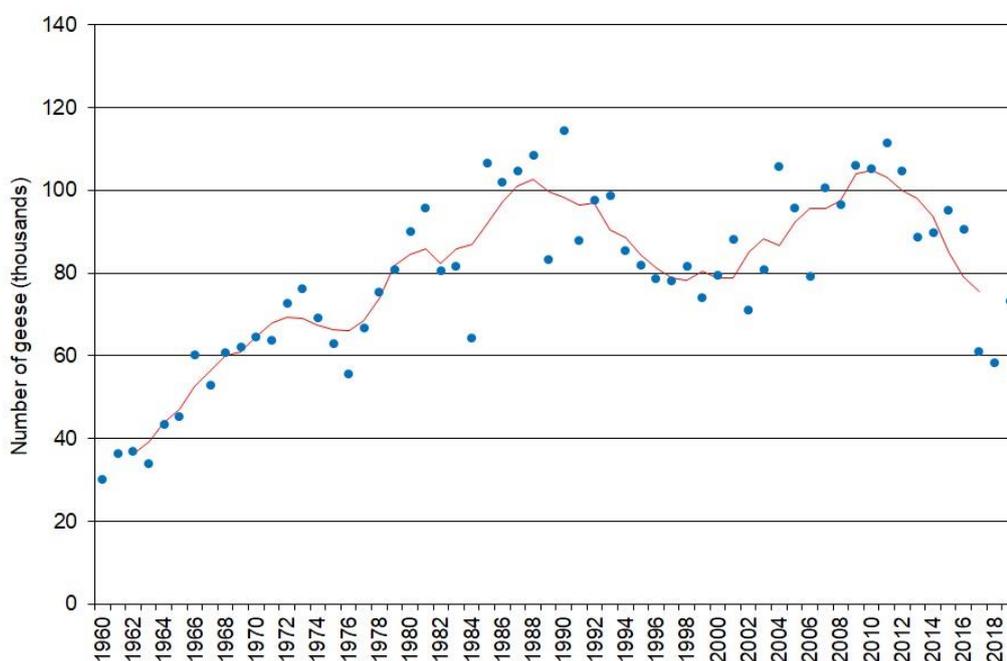


Figure 1. Annual census-derived estimates of Iceland Greylag Goose population size, 1960–2019. Five year running mean shown as red line (e.g. mean for 2017 is from population estimates for 2015-2019).

2. Breeding success

During mid-November, 1,200 Greylag Geese from six flocks were aged at various locations in Caithness, Scotland. This represented 1.6% of the 2019 population estimate. The brood size of 12 families was also determined during this period. These are very small sample sizes due to the uncertainty in knowing which population the geese being aged belong to. In almost all areas in north Scotland birds from both the British-breeding and Iceland-breeding populations occur together.

The percentage of young found amongst flocks (20.1%) was lower than the previous year (22.6% in 2018), and lower than the recent ten-year mean (mean 2009–2018: 21.7% \pm 0.40 SE). The mean brood size of 2.17

goslings per successful pair was lower than that of the previous ten-year mean (mean 2009–2018: 2.23 ± 0.08 SE).

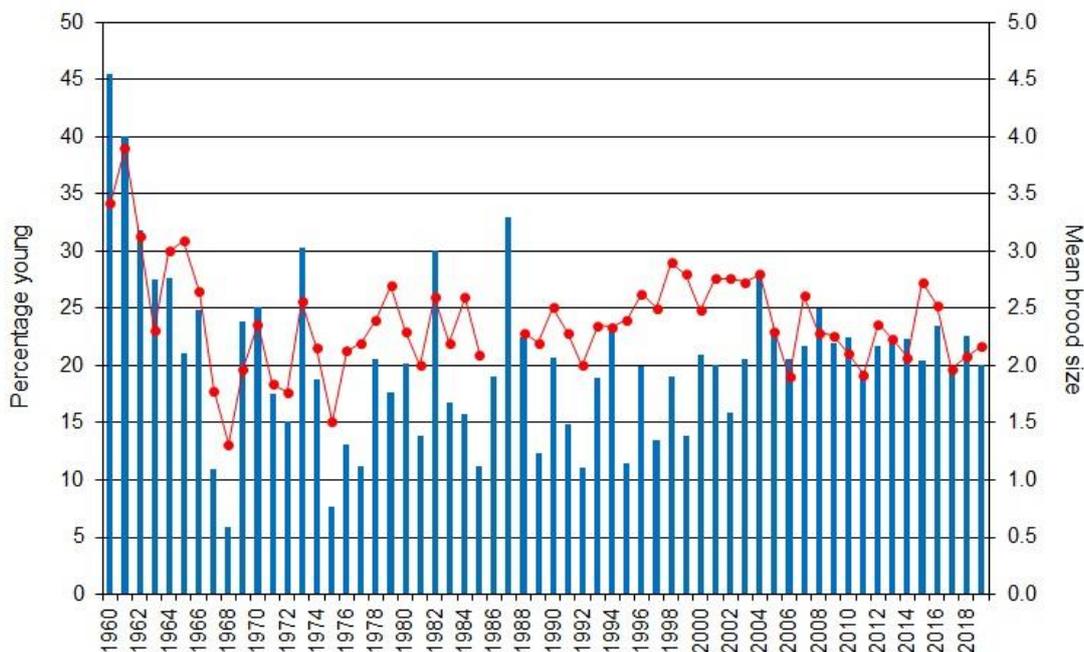


Figure 2. The percentage of young (blue columns) and mean brood size (red circles) of Iceland Greylag Geese, 1960–2019.

3. Discussion

The population estimate of 73,355 Iceland Greylag Geese was 25.6% higher than the 2018 estimate (58,426), suggesting undercounts during 2017 (60,962 birds) and 2018 (58,426); however, it is worth noting that the population estimate in 2019 remains below the ten-year average of 92,851 birds (2009–2018). While it remains uncertain the degree to which undercounting and under-estimation in Orkney and Iceland (the two sites holding the majority of birds) may have affected the 2017 and 2018 population estimates, given that the 2019 population estimate remains below the ten-year average, the trajectory of the Iceland Greylag Goose population needs carefully monitoring to identify any real time declines to this population.

Orkney continues to hold the largest proportion of the Iceland Greylag Goose population. As the islands also hold wintering geese from the British population, a good understanding is required of the number of British birds present in order to determine an estimate for the number of Icelandic geese. To estimate this for 2019, we used the total count from the August 2019 post-breeding census of Greylags in Orkney (22,956 birds; (Plowman J. In prep.) from which we deducted an estimate of the number of British birds shot in Orkney between August and November 2019 (5,000 birds, J. Plowman pers. comm.). This resulted in an estimate of 18,000 British birds, which was then deducted from the overall Orkney IGC total to estimate the number of Iceland Greylag Geese present in November 2019.

Large numbers of British Greylag Geese in core wintering areas for the Iceland population, such as Orkney and the Moray Firth, means that assessing the abundance of the Iceland population during the non-breeding season remains very difficult. Up to date information on the status of Greylag Geese in Britain, especially

south and east of an arbitrary line from Bute east to Aberdeen (although increasingly north of this line too) is largely lacking. Therefore, simply as a precaution, any counts obtained through the IGC from the area south and east of the arbitrary line, are assumed to be British birds and subtracted from the total count. However, as recently as winter 2019/20, Iceland Greylag Geese have been sighted / GPS tracked as far south as the Central Belt of Scotland (A. Sigfusson pers. comm.) showing some overlap in the wintering population south of the arbitrary line as described above, which means there is a possibility that some Iceland Greylag Geese could have been missed from the overall Iceland population total. The overall total was also adjusted to take in to account resident birds in Ireland and the Faroe Islands too.

The results from summer counts (carried out in 2016, C.Mitchell pers. obs.) suggest that the majority of birds found in Caithness in winter are from the Iceland population; therefore, annual breeding success of Iceland Greylag Geese is determined by using counts from wintering flocks there. In 2019, the percentage of young found amongst flocks was 20.1% which was lower than the recent ten-year mean (mean 2009–2018: 21.7% \pm 0.40 SE). The monitoring of annual breeding success of this species remains difficult because of the overlap in the main wintering area (Orkney and around the Moray Firth) of both Greylag Goose populations.

The harvesting of Greylag Geese in Iceland has fluctuated between c.38,000–60,000 birds annually between 2008 and 2019 (at the time of writing, data for 2019 are preliminary) (Figure 3; Statistics Iceland 2020). Since the start of hunting bag reporting in Iceland, the average total bag for Greylag Goose has been 40,295 birds (\pm 1.391 SE). Whilst it is currently unknown to what degree the effect of harvesting in Iceland may have on the overall population total, knowledge of how harvesting on the wintering grounds affects the population is also required; however, hunting bag statistics are not collected in Britain and Ireland. It would therefore be advantageous to initiate the annual collection of hunting bag data in Britain to contribute to a better understanding of the demography of the Iceland Greylag Goose population.

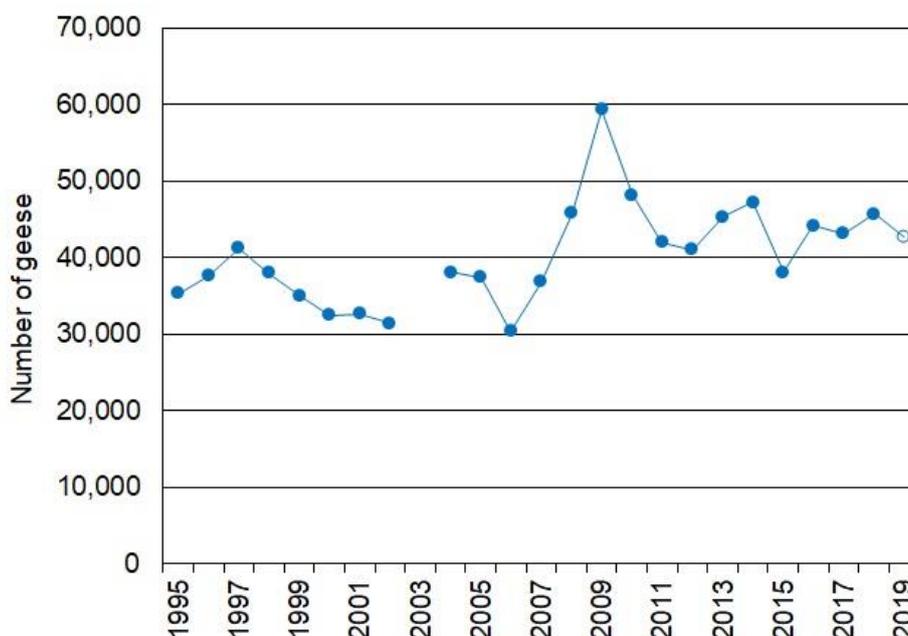


Figure 3. The annual number of harvested Greylag Geese in Iceland, 1995–2019. Data for 2019 (non-filled circle) are preliminary. No data are available for 2003. (Statistics Iceland 2020).

4. Acknowledgements

Many thanks go to the many IGC counters and Local Organisers who provided the basis of the population estimates. Thanks also go to those who contributed age assessment data.

5. References

Brides, K, C. Mitchell & S.N.V. Auhage. 2020. *Status and distribution of Icelandic-breeding geese: results of the 2019 international census*. Wildfowl & Wetlands Trust Report, Slimbridge. 19 pp.

Plowman, J. In prep. *Survey of Resident Greylag Goose in Orkney, September 2019*. NatureScot report.

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Goose & Swan Monitoring