

# WWT/JNCC/NatureScot Goose & Swan Monitoring Programme survey results 2020/21

## Iceland Greylag Goose *Anser anser*

### 1. Abundance

The 61st consecutive Icelandic-breeding Goose Census (IGC) took place early winter 2020, providing information on the abundance and distribution of Iceland Greylag Geese. A full account of the census can be found in Brides *et al.* (2021).

In Britain and Ireland, a network of volunteer observers and professional conservation staff conducted counts over the weekend of 21/22 November. The additional three-yearly spring census, scheduled to take place in March 2021, was cancelled due to the various restrictions in place as a result of the Covid-19 pandemic; this will, instead, take place in 2022.

In Iceland, Greylag Geese were counted by aerial and ground surveys: all counts were carried out in favourable conditions. Counts in Southwest Norway took place in January rather than November: 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). No counts were undertaken in the Faroe Islands.

The total count was 92,582 Greylag Geese (Table 1). Following adjustments for the presence of British/Irish Greylag Geese (see Brides *et al.* 2021), which is significant in some areas, a population estimate of 60,061 was derived. This represented a decrease of 18.1% compared to 2019 when a population of 73,355 was estimated and is similar to the estimates in 2017 and 2018 (Figure 1).

By November, just under three-quarters of the population (71%) were found in North Scotland, primarily in Orkney, with 21.2% present in Iceland and less than 4% in each of Southwest Norway, Ireland and all other regions in Britain (Table 1).

*Table 1. Regional distribution of Iceland Greylag Geese during November 2020 (nc represents no count received or no count undertaken). See Brides et al. 2021 for further details).*

Region	November
Iceland	12,734
Southwest Norway	1,500*
Faroe Islands	nc
Ireland	2,196
North Scotland	64,958
Northeast Scotland	2,250
East Central Scotland	3,192

Region	November
Southeast Scotland/Northeast England	3,693
Southwest Scotland/Northwest England	657
East England	1,402
<i>Total counted</i>	92,582
<i>Adjusted counts</i>	-32,521
<b>Population estimate</b>	<b>60,061</b>

\*Counts made in January 2021 (see Brides *et al.* 2021).

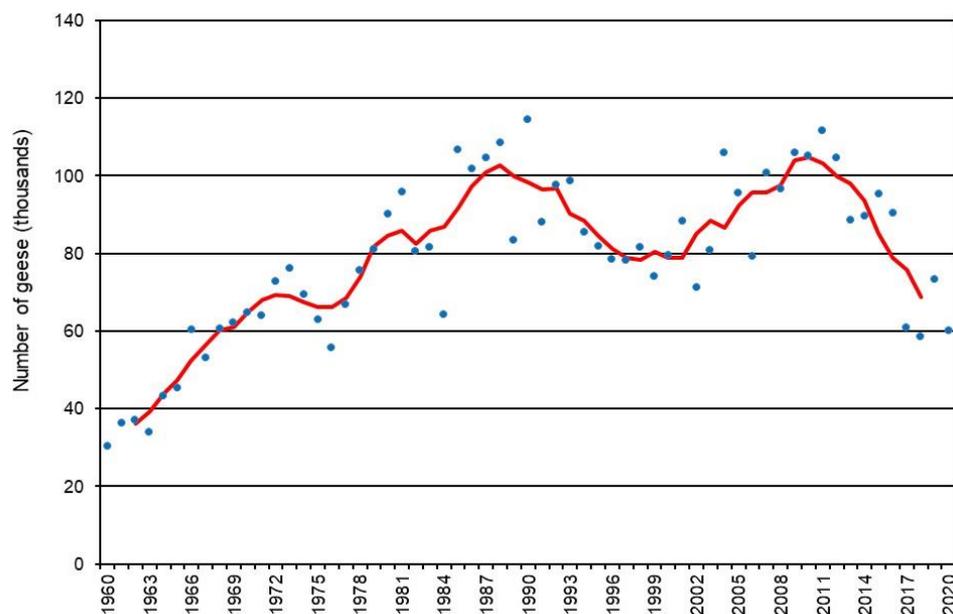


Figure 1. Annual census-derived estimates of Iceland Greylag Goose population size, 1960–2020. Five year running mean shown as red line (e.g. mean for 2018 is from population estimates for 2016–2020).

## 2. Breeding success

Due to the increasing difficulty in assessing the breeding success of Iceland Greylag Geese on the wintering grounds, no age assessment data was collected during autumn 2020. See Discussion.

## 3. Discussion

The 2020 population estimate (60,061) for the Iceland Greylag Goose is lower than the 2019 estimate and below the average for the previous ten-years (87,804 birds; 2010–2019), as it has been since 2013 when the

population estimate notably declined following the most recent peak in 2011. This recent apparent decline in the population is a cause for concern.

The methodology used to estimate the number of Iceland Greylag Geese has remained consistent over time, and thus the population estimate is believed to be robust. However, it remains unclear to what degree undercounting and possible under-estimation in Orkney and Iceland may have affected recent population estimates. Whilst Orkney and Iceland are the two sites which hold the majority of Icelandic birds, more up to date information from the wintering areas is needed, especially in regard to the numbers and distribution of British Greylag Geese which may mix during the winter with birds from the Iceland population.

Large numbers of British Greylag Geese in core wintering areas of the Iceland population, such as in Orkney, Caithness and the Moray Firth. In order to provide an estimate of the number of Iceland birds in areas where British birds also occur, we deduct an estimate of the number of British birds thought to be in the area during the time of the November census. 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) are 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 are subtracted from the total count. Given that information on British birds in these areas is now largely out of date, the undertaking of late summer surveys in key areas, similar to those undertaken occasionally on Orkney, would be highly advantageous and would allow a more accurate population estimate to be derived. Furthermore, in order to better understand the current overlap in the distribution of the two populations, marking and tracking of the Icelandic birds would help determine how far south this population is wintering in Britain.

Consideration of hunting pressure on the Iceland population, both in Iceland and Britain, also needs to be taken in to account as an important driver of the observed decline. Possible changes in the timing of the autumn migration from Iceland to Britain has the consequence to allow for more birds to be shot in Iceland prior to departure. During 2019, 42,780 Greylag Geese were reported shot in Iceland, this being similar to the previous ten-year mean (2009–2018: 45,444 birds  $\pm$  1,816 SE) (Statistics Iceland 2021). However, since 2008, the average total bag for Greylag Goose in Iceland has been 45,252 birds ( $\pm$ 1,517 SE) which is a c.10,000 increase in the number of birds harvested per year compared with prior to 2008. This increase fits with the period of decline observed in the Iceland Greylag Goose population since 2011. To gain a better understanding of the effects of harvesting on the Iceland Greylag Goose population, collaboration with hunting officials in Iceland and the integration of hunting bag data in to analyses of population estimates is required. Furthermore, hunting bag statistics are not routinely collected in Britain and Ireland and it would be advantageous to initiate the annual collection of these data to contribute to a better understand of hunting pressure on wintering Iceland Greylag Geese.

British Greylag Geese on Orkney are being managed to try to reduce impacts on agriculture in the islands. Shooting under this scheme does not overlap with the period when Icelandic birds are present; however, Greylag Goose has recently been placed on general licence GL02/21 in Scotland that allows birds to be controlled to protect crops and livestock throughout the year. There is, therefore, a short period of the close season from the end of January through to the point when Icelandic birds leave Scotland, when there could be increased shooting mortality for the Icelandic population. Increased shooting pressure and the extension to the shooting season could also potentially be causing some British birds to start wintering off Mainland Orkney and moving to the surrounding islets. There is, therefore, the potential for Icelandic birds to be at greater risk of being shot during the winter period if they winter mainly on Mainland Orkney. Currently the proportions of British and Icelandic birds on different islands is unknown.

To gain a better insight into the movements of British birds on and surrounding Mainland Orkney, it would be advantageous to capture and colour-mark British Greylag Geese on Orkney during the summer, to study their winter movements and distribution in relation to the Icelandic birds.

The colour-marking of both Iceland and British Greylag Geese plays an important role in the future monitoring of the Iceland population. By colour-marking birds this will bring about a better understanding of the wintering distribution of Iceland Greylag Geese, provide information on the timing of movements from

Iceland and allow updated survival analyses to be undertaken; the last such assessment was undertaken in 2004 (Frederiksen *et al.* 2004). Up to 35 Iceland Greylag Geese are being fitted with GPS tags in Iceland in the summer of 2021. With a potential lifespan of two years these tags should provide a considerable amount of information on the migration timing, winter distribution and in-winter movements of this population.

Recommendations for the future monitoring of this population were given in Brides *et al.* 2020. However, as mentioned in previous reports, the monitoring of Iceland Greylag Goose breeding success on the wintering grounds in Britain is becoming increasingly difficult due to the overlap in the wintering ranges of the Iceland and British populations. Due to this, no assessment of breeding success was undertaken during 2020. As part of further discussions surrounding the monitoring of the Iceland population, preferably with the inclusion of contacts in Iceland, consideration should be given to exploring ways in which breeding surveys of the species can be undertaken in Iceland before the autumn migration commences.

#### **4. Acknowledgements**

Many thanks go to the many IGC counters and Local Organisers who provided the basis of the population estimates.

#### **5. References**

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## Goose & Swan Monitoring