

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

Greenland White-fronted Goose *Anser albifrons flavirostris*

1. Abundance

Coordinated counts of the Greenland White-fronted Goose population in Britain and Ireland were carried out in autumn 2019 and spring 2020, representing the 28th annual census. The counts were organised by the Greenland White-fronted Goose Study in Britain and by the National Parks and Wildlife Service in Ireland.

Combining the results from the spring 2020 coordinated counts in Britain and Ireland gives a population estimate of 21,509, a very slight increase of 0.2% on the spring 2019 estimate (Figure 1; Table 1).

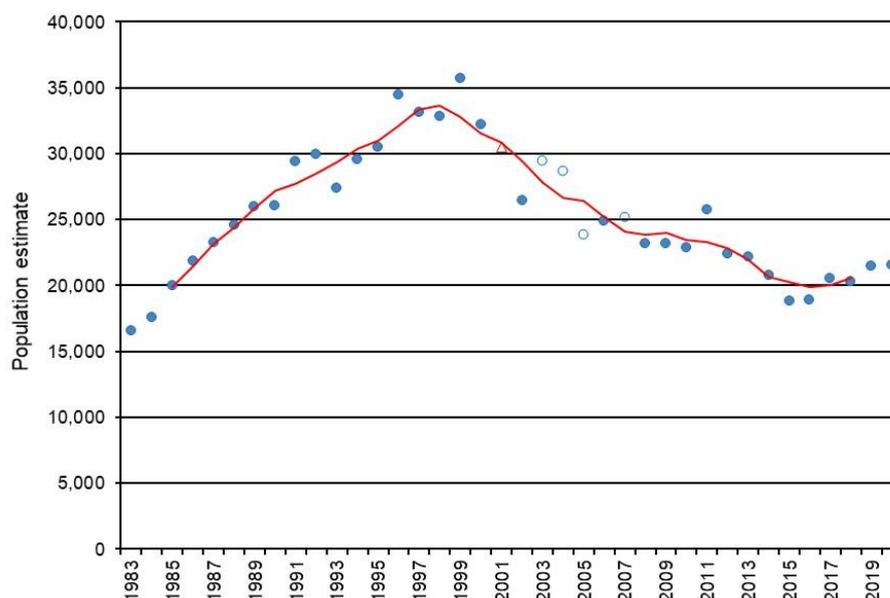


Figure 1. Annual population estimates of Greenland White-fronted Geese, spring 1983–2020 (filled circles) (from Fox et al. 2020). The five-year running mean (e.g. mean for 2018 is from population estimates for 2016–20) is shown as a red line. The open circles indicate estimated values for years when data were missing from Ireland. The open triangle indicates the estimated value for 2001 when data were missing due to the outbreak of Foot and Mouth disease that year.

Table 1. Autumn and spring counts in Britain and Ireland, 2019/20 (includes substituted counts; see full report) (from Fox et al. 2020).

Region	Autumn Census	Spring Census
Orkney	89	71
Caithness	297	304
Western Isles	183	180
Inner Hebrides	10	10
Lochaber/North Argyll	1,242	1,258
South Argyll	2,953	2,998
Islay	6,325	5,910
Dumfries & Galloway	354	311
Wales	40	28
England	4	21
Britain total	11,497	11,091
Donegal	1,001	1,055
North Central	124	131
Mayo	56	52
Mayo/Galway Uplands	119	119
Galway Lowlands	149	146
Clare/Limerick	79	47
Shannon Headwaters	120	120
Middle & Lower Shannon	267	251
Midlands	280	185
Wexford/South East	6,672	8,312
Ireland total	8,867	10,418
Population estimate	–	21,509

Coverage was more or less complete in Britain, with all resorts counted at least once during the 2019/20 season. For any sites not covered during the census periods, counts were substituted with those undertaken close to the defined dates. For autumn 2019, counts were substituted for seven sites, accounting for 3.6% of the British autumn total, whilst for spring 2020, counts were substituted for seven sites, accounting for 2.3% of the spring total.

An overall total of 11,497 Greenland Whitefronts was recorded in Britain during the autumn 2019 census, representing a 6.1% increase compared with the previous year (Figure 2). During the autumn census, four geese were recorded in England, 40 in Wales and 11,453 in Scotland, of which 55.2% were on Islay (Table 1): the total count on Islay was 8.2% higher than recorded in autumn 2018.

The spring 2020 census total was 11,091 geese, representing an 8.6% decrease compared with spring 2019 (Figure 2). During the census, 21 geese were recorded in England, 28 in Wales and 11,042 in Scotland, of which 53.5% were on Islay (Table 1): the total count on Islay was 12.7% lower than recorded in spring 2019.

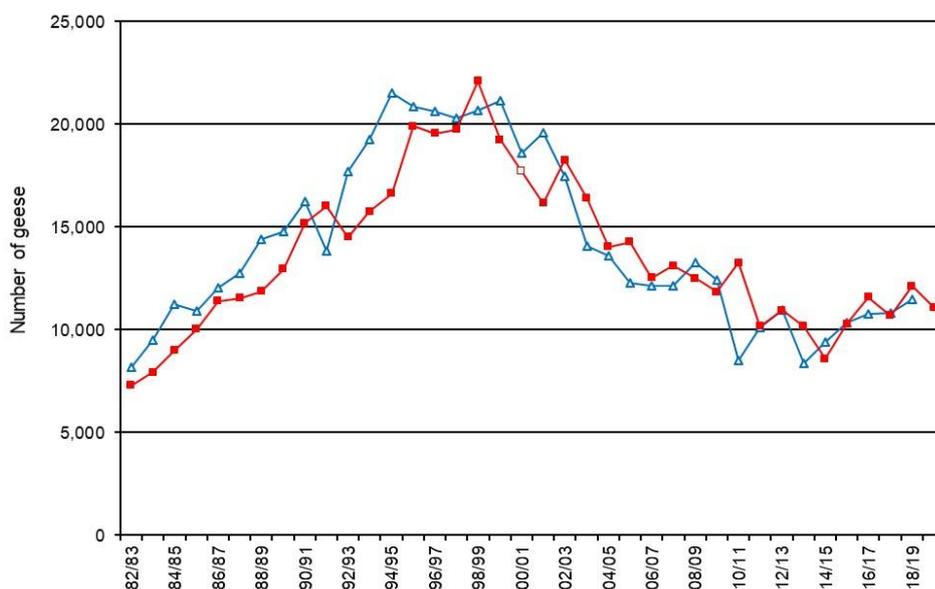


Figure 2. Coordinated count totals of Greenland White-fronted Geese in Britain, 1982/83–2019/20, showing autumn (open triangles) and spring (filled squares) census results for each season. Note the missing value for spring 2001 (unfilled square) due to the outbreak of Foot and Mouth Disease that year (from Fox *et al.* 2020).

Although the majority of sites in Ireland were covered at least once during the 2019/20 season, only limited coverage was achieved during the spring 2020 census due to restrictions in place as a consequence of the COVID-19 pandemic. For the autumn 2019 census, counts were substituted for ten sites, accounting for 11.0% of the overall autumn total, whilst for the spring 2020 census, counts were substituted for 18 sites, accounting for 96.6% of the census total: this high percentage is due to sites in Wexford, where the majority of geese winter in Ireland, not being covered (see Fox *et al.* 2020 for further details).

An autumn census total of 8,867 Greenland Whitefronts was recorded in 2019, this being 1.8% higher than in autumn 2018: 75.2% of the geese were located in Wexford, which was slightly lower than during the

autumn census of the previous year (Figure 3; Table 1). An estimated total of 10,418 geese was recorded for the spring 2020 census, representing an 11.6% increase compared with the 2019 count: an estimated 79.8% of the total were thought to have been in Wexford, which is 11.8% higher than during the spring 2019 census (Figure 3; Table 1).

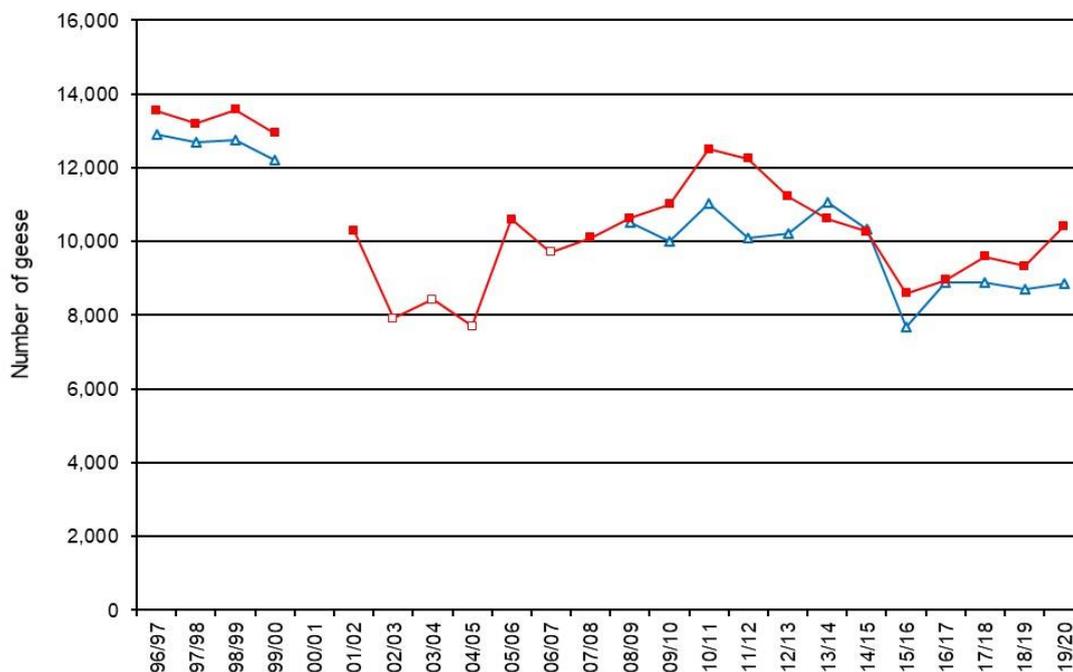


Figure 3. Coordinated count totals of Greenland White-fronted Geese in Ireland, 1996/97–2019/20, showing autumn (open triangles; data unavailable for 2000–2007) and spring (filled squares; open squares represent estimated values for years when data were available from Wexford only) census results for each season (from Fox *et al.* 2020). No data were for 2001 due to the Foot & mouth outbreak.

2. Breeding success

Revised 2018/19 results

Following the publication of the results for the 2018/19 census in Fox *et al.* 2019, a correction was made to breeding success data supplied for Coll (Argyll). This resulted in the overall percentage young for Britain being revised to 11.1% (previously reported as 11.5%). See Fox *et al.* 2020 for further details.

2019/20 results

A total of 6,967 Greenland White-fronted Geese were aged in Britain during 2019/20, of which 19.5% were young birds (Table 2), this being markedly higher than the revised result for 2018/19 (11.1% young; Figure 4) and the previous ten-year mean (13.3%, 2009/10–2018/19). The overall mean brood size, amongst the 122 families sampled, was 2.70 young per successful pair (Table 2), which is similar to that for the previous winter (2.67) and slightly lower than the previous ten-year mean (2.90, 2009/10–2018/19) (Figure 4).

Across the 18 sites in Britain where age assessments were carried out, the percentage of young amongst flocks ranged from 0% to 43.3% (sample sizes of 5–2,608 birds), with below 10% young recorded at six sites, including three that held 0%. On Islay, where the largest sample of geese was aged, 20.7% of the geese were recorded as young birds (Table 2), which is well above the result for 2018/19 (12.3% amongst

3,551 birds). Elsewhere in Britain, amongst the 4,359 birds aged, 18.8% were young, this being notably higher than the previous winter (9.6% amongst 2,883 birds).

A total of 5,058 Whitefronts were aged across ten sites in Ireland during 2019/10, of which 10.8% were recorded as young birds (Table 2), notably higher than in 2018/19 (6.7%; Figure 5) but slightly lower than the previous ten-year mean (12.3%, 2009/10–2018/19). The overall mean brood size, for the 137 families assessed, was 3.07 young per successful pair, slightly higher than recorded in 2018/19 (2.80) and the previous ten-year mean (2.84, 2009/10–2018/29).

Across the sites, the percentage young ranged from 0% to 40.0% (with sample sizes of 16 to 4,466 birds), with five sites holding below 10% young, including two which held 0%. At Wexford, where the majority of birds were aged, 10.8% were recorded as young birds (Table 2), this being notably higher than the previous winter (6.9% amongst 4,447).

Table 2. Percentage of young and mean brood size of Greenland White-fronted Geese in Britain and Ireland during winter 2019/20 (from Fox et al. 2020).

Region	Percentage of young (n)	Mean brood size (n)
Islay	20.7% (2,608)	2.83 (48)
Rest of Britain	18.8% (4,359)	2.62 (74)
Britain overall	19.5% (6,967)	2.70 (122)
Wexford	10.8% (4,466)	3.14 (115)
Rest of Ireland	11.5% (592)	2.68 (22)
Ireland overall	10.8% (5,058)	3.07 (137)

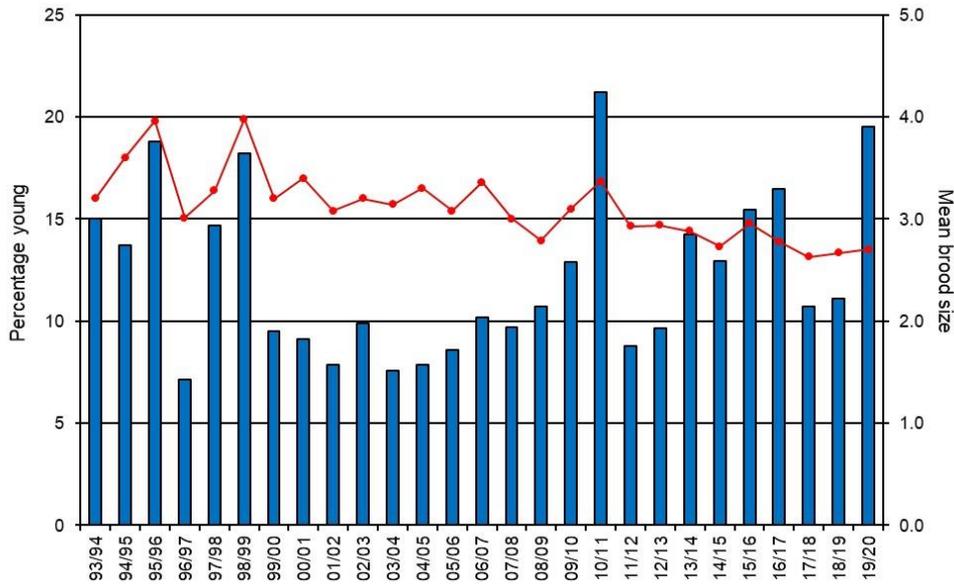


Figure 4. The percentage of young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Britain, 1993/94–2019/20 (from Fox et al. 2020).

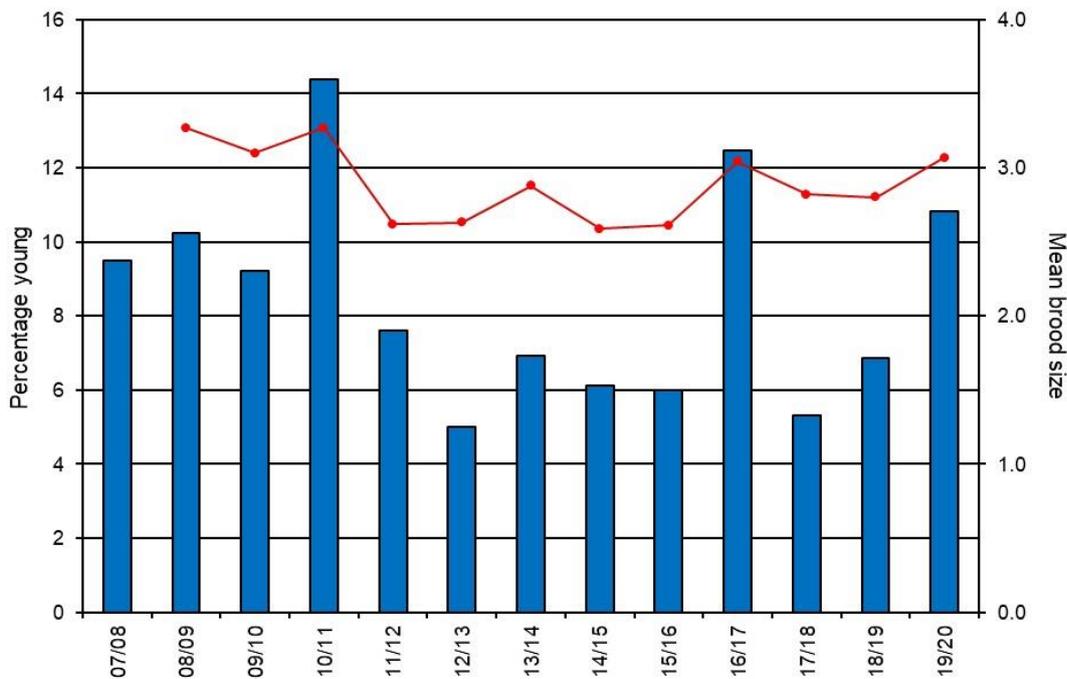


Figure 5. The percentage of young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Ireland, 2007/08 – 2019/20 (no overall brood size data are available for 2007/08) (from Fox et al. 2020).

3. Discussion

The Greenland White-fronted Goose population has suffered a significant decline since the turn of the century, with numbers falling from a peak of c. 35,700 in 1999 to under 19,000 by 2015. However, since 2017, the population appears to have stabilised, with the 2020 population estimate being slightly higher than the 2019 estimate (21,509) and the highest total since 2013 (Figure 6).

Breeding success among British wintering flocks of Greenland Whitefronts was exceptionally high after the 2019 breeding season: this included 20.7% young on Islay, where there have only been six years since 1962, when records began, when the percentage of young recorded among wintering flocks there has exceeded 20% (see Fox *et al.* 2020 for further details).

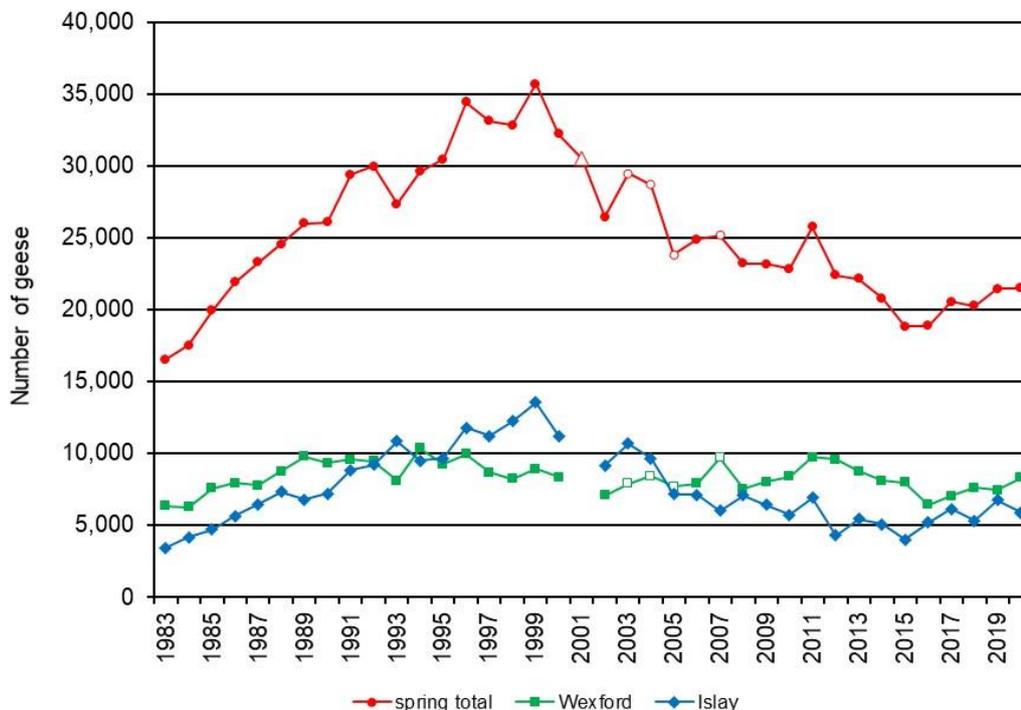


Figure 6. The annual population estimate of Greenland White-fronted Goose (green squares), with numbers recorded at Wexford (blue diamonds) and Islay (red circles), spring 1983–2020 (from Fox *et al.* 2020). Open symbols represent estimated counts: see Figures 1–3 for further details.

For further details see (from Fox *et al.* 2020).

4. References

Fox, A.D, I. Francis, D. Norriss & A. Walsh. 2019. *Report of the 2018/2019 International Census of Greenland White-fronted Geese*. Greenland White-fronted Goose Study / National Parks & Wildlife Service report, Kalo.

Fox, A.D, I. Francis, D. Norriss & A. Walsh. 2020. *Report of the 2019/2020 International Census of Greenland White-fronted Geese*. Greenland White-fronted Goose Study / National Parks & Wildlife Service report, Kalo.

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Goose & Swan Monitoring