

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

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 2020 and spring 2021, representing the 29th 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 2021 coordinated counts in Britain and Ireland gives a population estimate of 20,186, a decrease of 6.2% on the spring 2020 estimate (Figure 1; Table 1).

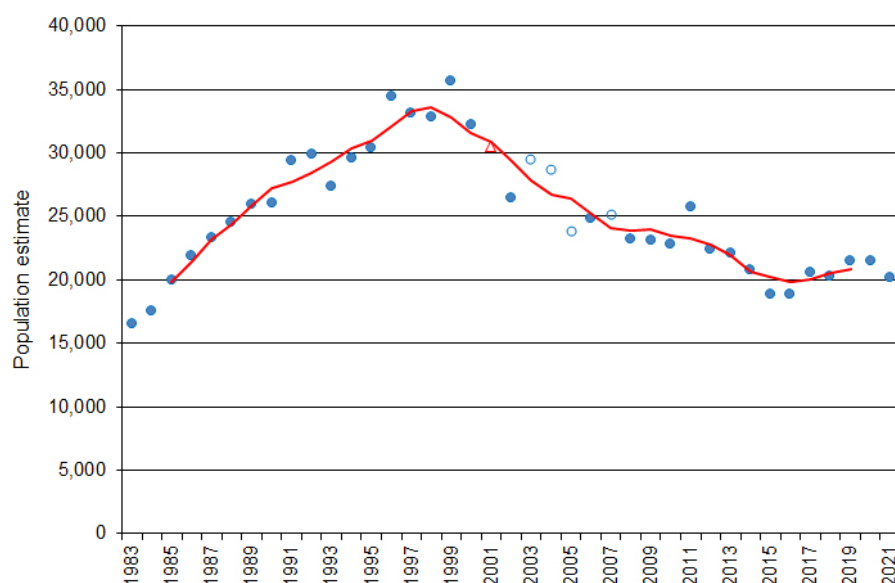


Figure 1. Annual population estimates of Greenland White-fronted Geese, spring 1983–2021 (filled circles) (from Fox et al. 2021). The five-year running mean (e.g. mean for 2018 is from population estimates for 2016–2020) is shown as a red line. The open circles indicate estimated values for years when 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, 2021/22 (includes substituted counts; see full report) (from Fox et al. 2021).

Site name	AUTUMN	SPRING
Orkney	62	102
Caithness	310	287
Western Isles	204	145
Inner hebrides	8	8
Lochaber/North Argyll	1,355	1,272
South Argyll	2,418	2,744
Islay	6,350	6,878
Dumfries & Galloway	291	292
England	14	2
Scotland	3	6
Wales	44	40

Britain total	11,059	11,776
Donegal	766	1,085
North Central	129	137
Mayo	62	62
Mayo/Galway Uplands	86	98
Galway Lowlands	149	132
Clare/Limerick	42	45
Shannon Headwaters	100	100
Middle & Lower Shannon	309	219
Midlands	270	270
Southwest	0	0
Southeast (Wexford)	5,904	6,262
Ireland Total	7,817	8,410
Population estimate		20,186

Coverage was more or less complete in Britain, with all resorts counted at least once during the 2020/21 season. For any sites not covered during the census periods, counts were substituted with those undertaken close to the defined dates. For autumn 2020 and spring 2021, counts were substituted for seven sites, accounting for 1.7% and 3.8% of the British autumn and spring totals, respectively.

An overall total of 11,059 Greenland White-fronted Geese was recorded in Britain during the autumn 2020 census, representing a 3.8% decrease compared with the previous year (Figure 2). During the autumn census, 14 geese were recorded in England, 44 in Wales and 11,001 in Scotland, of which 57.7% were on Islay (Table 1). The total count on Islay (6,350 birds) was just 25 birds higher than recorded there in autumn 2019.

The spring 2021 census total was 11,776 geese, representing an 6.2% increase compared with spring 2020 (Figure 2). During the census, two geese were recorded in England, 40 in Wales and 11,734 in Scotland, of which 58.6% were on Islay (Table 1). The total count on Islay (6,878 birds) was 16.4% higher than recorded there in spring 2020 (5,910).

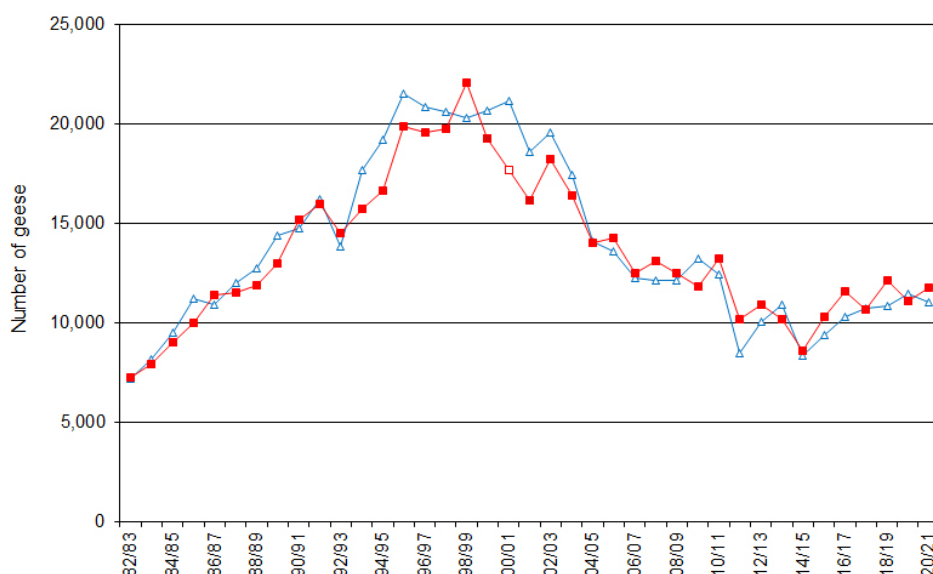


Figure 2. Coordinated count totals of Greenland White-fronted Geese in Britain, 1982/83–2020/21, showing autumn (open triangles) and spring (filled squares) census results for each season. Note the missing value

for spring 2001 (unfilled square) due to the outbreak of Foot and Mouth Disease that year (from Fox *et al.* 2021).

Good coverage was achieved throughout Ireland during 2020/21, although Covid-19 restrictions did prevent counts taking place at some sites and a few flocks proved elusive to find (see Fox *et al.* 2021). For the autumn 2020 census, counts were substituted for six sites, accounting for 5.7% of the overall autumn total, whilst for the spring 2021 census, counts were substituted for ten sites, accounting for 17.0% of the census total.

An autumn census total of 7,817 Greenland White-fronted Geese was recorded in 2020, this being 11.8% lower than in autumn 2019, with 75.5% of the geese located in Wexford (Figure 3; Table 1). The total count in Wexford (5,904 birds) was 11.5% lower than recorded in autumn 2019 (6,672).

An estimated total of 8,410 geese was recorded for the spring 2021 census, representing an 19.3% decrease compared with the 2020 count, with 74.5% of the total were recorded in Wexford (Figure 3; Table 1). The total count in Wexford (6,262 birds) was 24.7% lower than estimated for spring 2020 (8,312).

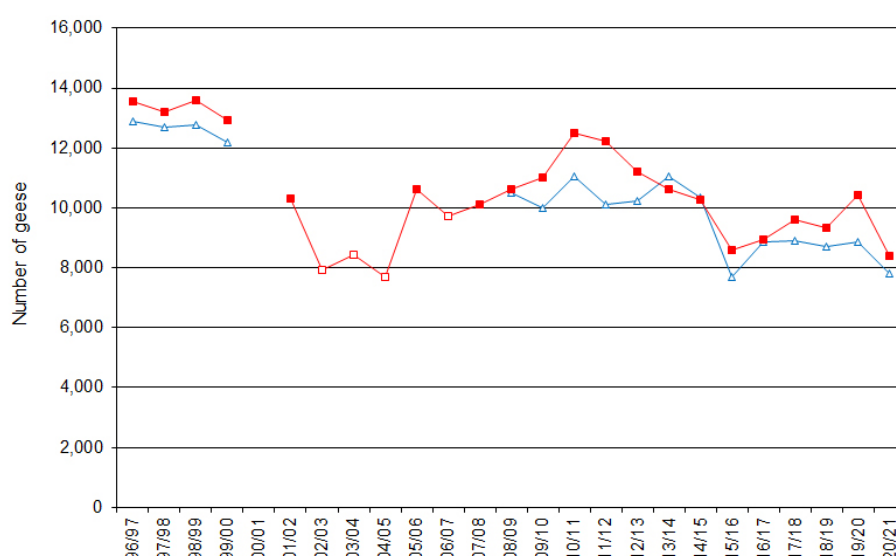


Figure 3. Coordinated count totals of Greenland White-fronted Geese in Ireland, 1996/97–2020/21, showing autumn (open triangles; data unavailable for 2000–2007) and spring (filled squares; open squares represent estimated values for years when data were available from Wexford only) census results for each season (from Fox *et al.* 2021). No data were for 2001 due to the Foot & mouth outbreak.

2. Breeding success

A total of 4,619 Greenland White-fronted Geese were aged in Britain during 2020/21, of which 13.0% were young birds (Table 2), this being notably lower than the result for 2019/20 (19.5%) but similar to the previous ten-year mean (14.0%, 2010/11–2019/20). The overall mean brood size, amongst the 145 families sampled, was 2.41 young per successful pair (Table 2), which is slightly lower than that for the previous winter (2.70) and the previous ten-year mean (2.86, 2010/11–2019/20) (Figure 4).

Across the 23 sites in Britain where age assessments were carried out, the percentage of young amongst flocks ranged from 0% to 100% (sample sizes of 1–2,231 birds), with below 10% young recorded at five sites, including two that held 0%. On Islay, where the largest sample of geese was aged, 11.5% of the geese were recorded as young birds (Table 2), which is well below the result for 2019/20 (20.7% amongst 2,608 birds). Elsewhere in Britain, amongst the 2,388 birds aged, 14.5% were young, this also being lower than for the previous winter (18.8% amongst 4,359 birds).

A total of 3,072 Greenland White-fronted Geese were aged across just four sites in Ireland during 2020/21, of which 6.4% were recorded as young birds (Table 2), this being lower than in 2019/20 (10.8%; Figure 5) and the previous ten-year mean (8.2%, 2010/11–2019/20). The overall mean brood size, for the 54 families assessed, was 3.24 young per successful pair (Table 2), this being slightly higher than recorded in 2019/20 (3.07) and above the previous ten-year mean (2.83, 2010/11–2019/20) (Figure 5).

Across the sites, the percentage young ranged from 5.9% to 21.0% (with sample sizes of 17 to 2,921 birds), with two sites holding below 10% young. At Wexford, where the majority of birds were aged, 6.2% were recorded as young birds (Table 2), this being lower than for the previous winter (10.8% amongst 4,466).

Table 2. Percentage of young and mean brood size of Greenland White-fronted Geese in Britain and Ireland during winter 2020/21 (from Fox et al. 2021).

Region	Percentage of young (n)	Mean brood size (n)
Islay	11.5% (2,231)	2.64 (55)
Rest of Britain	14.5% (2,388)	2.27 (90)
Britain overall	13.0% (4,619)	2.41 (145)
Wexford	6.1% (2,921)	3.26 (50)
Rest of Ireland	11.3% (151)	3.00 (4)
Ireland overall	6.4% (3,072)	3.24 (54)

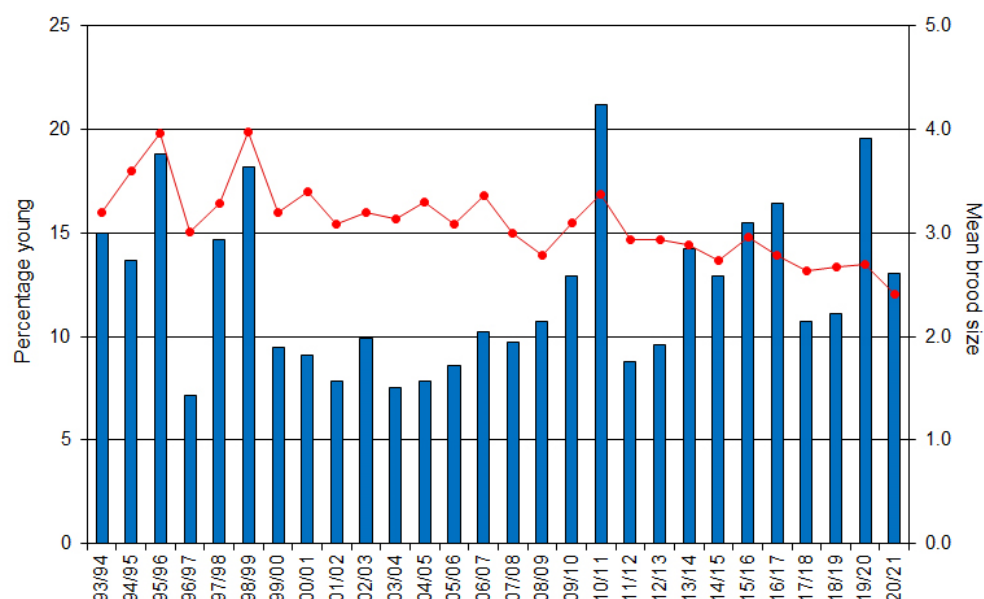


Figure 4. The percentage of young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Britain, 1993/94–2020/21 (from Fox et al. 2021).

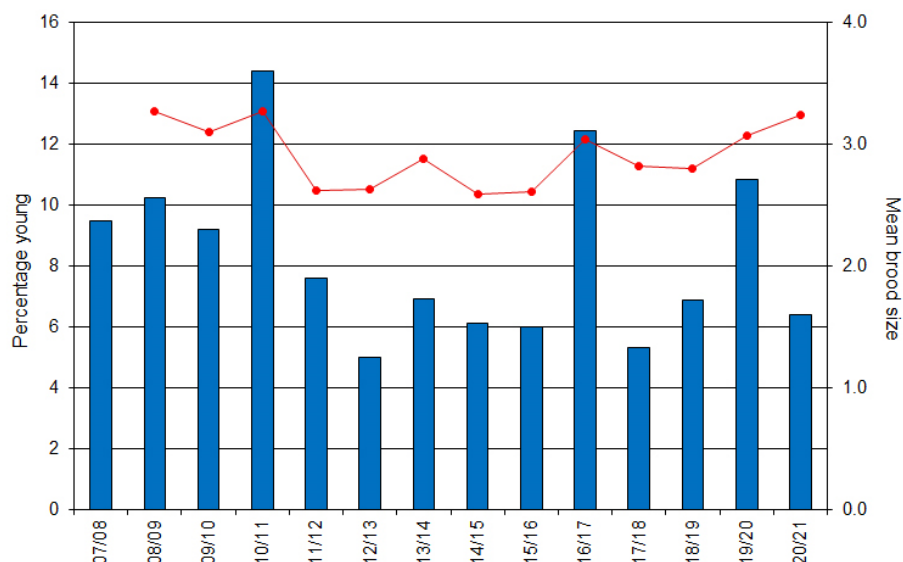


Figure 5. The percentage of young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Ireland, 2007/08 – 2020/21 (no overall brood size data are available for 2007/08) (from Fox et al. 2021).

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, although spring 2020 did see a slight decline (by 1,323 birds) compared with the previous year (Figure 6).

In Britain, there was little change in the total number recorded during the spring 2021 census compared with 2020, despite the reasonable breeding success in summer 2020. Compared with the previous year, almost all the wintering flocks monitored had remained stable or declined in abundance by up to 10%; however, the increase in numbers on Islay (Figure 6) had a balancing effect resulting in an overall increase in the population across the country.

Conversely, the total number recorded in Ireland during spring 2021 was notably lower than the previous year, mostly as a result of the drop in numbers recorded at Wexford where the lowest count since 1984 was recorded (Figure 6). Although this may, perhaps, not be surprising given the low reproductive success recorded among the birds accessed at Wexford in 2020/21, it does highlight a significant decline in local abundance.

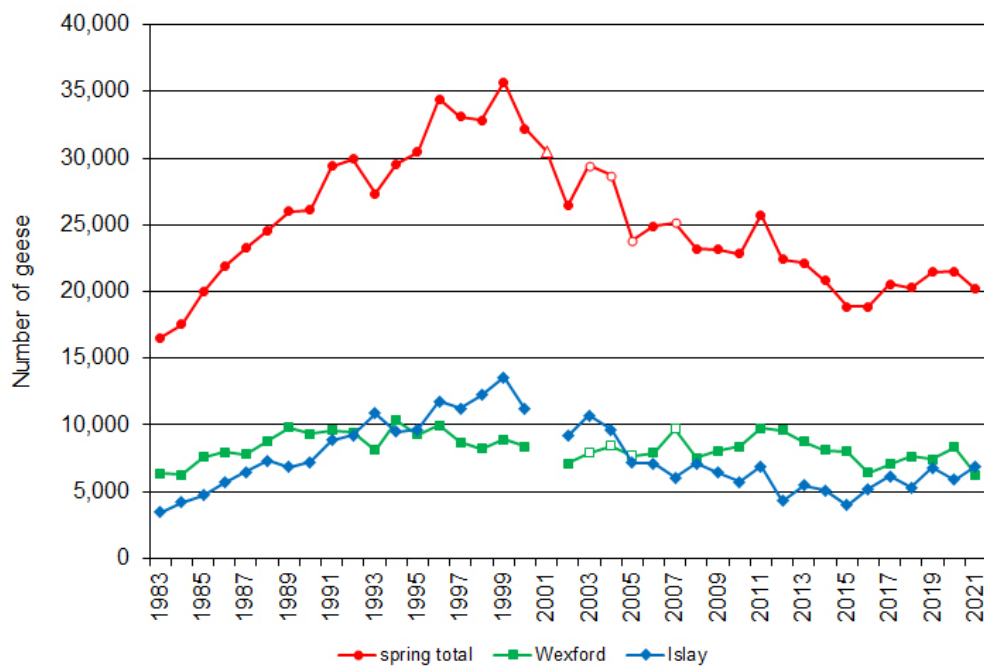


Figure 6. The annual population estimate of Greenland White-fronted Goose (green squares), with numbers recorded at Wexford (blue diamonds) and Islay (red circles), spring 1983–2021 (from Fox et al. 2021). Open symbols represent estimated counts: see Figures 1–3 for further details.

For further details see (from Fox et al. 2021).

4. References

Fox, A.D, I. Francis, A. Walsh, D. Norriss & S. Kelly. 2021. *Report of the 2020/2021 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