WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2014/15

Greenland White-fronted Goose *Anser albifrons flavirostris*

1. Abundance

Coordinated spring and autumn counts of the Greenland White-fronted Goose were carried out in Britain and Ireland for the 33rd consecutive winter. The censuses were organised by the Greenland White-fronted Goose Study in Britain and by the National Parks & Wildlife Service in Republic of Ireland and Northern Ireland.

Figure 1. Annual population estimates of Greenland White-fronted Geese, spring 1983-2015 (filled circles) (Fox et al. *2015). The five-year running mean (*e.g. *mean for 2008 is from population estimates for 2006-10) 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.*

All wintering resorts in Britain were covered at least once during the 2014/15 season. For any sites not covered during the census period, counts were substituted with those undertaken close to the defined dates; amounting to 2.1% and 4.1% of the autumn 2014 and spring 2015 totals, respectively. Overall, totals of 8,374 and 8,588 Greenland White-fronted Geese were recorded in autumn and spring, respectively (Table 1). This represents a decrease of 24% compared with autumn 2013 and a decrease of 16% compared with spring 2014 (Figure 2).

During the autumn census, over half the birds were recorded on Islay, which held 4,772, 19% lower than in autumn 2013 and the lowest recorded there since coordinated counts started on the island in 1983 (when 3,441 birds were recorded). The majority of the rest of the birds (3,573) were seen elsewhere in Scotland, with three also reported in England and 26 in Wales. During the spring census, 8,531 geese were recorded in Scotland, of which 3,995 were observed on Islay (22% lower than in spring 2014), 32 were seen in England and 25 in Wales.

Good coverage was also achieved in Ireland, with most of the known flocks counted at least once over the course of the winter. Counts were substituted for those sites not covered during the censuses, contributing 5.3% and 5.5% of the autumn and spring totals, respectively. A total of 10,340 Greenland Whitefronts was recorded in autumn 2014 (6.5% lower than in autumn 2013),

with 8,092 seen at Wexford (compared with 8,827 in 2013) (Table 1). During the spring 2015 census, a total of 10,266 was recorded (3.4% lower than in 2014), with Wexford again holding the majority of birds (7,984 compared with 8,110 in spring 2014).

Table 1. Autumn and spring counts in Britain and Ireland, 2014/15 (includes substituted counts; see text) (from Fox et al. *2015).*

Region	Autumn Census	Spring Census
Orkney	67	73
Caithness	200	244
NE Scotland	1	–
Western Isles	171	172
Inner Hebrides	21	24
Lochaber/North Argyll	912	1,165
South Argyll	1,863	2,489
Islay	4,772	3,995
Dumfries & Galloway	338	369
Wales	26	25
England	3	32
Britain total	**8,374**	**8,588**
Donegal	1,277	1,217
North Central	92	84
Mayo	78	91
Mayo/Galway Uplands	49	58
Galway Lowlands	144	147
Clare/Limerick	56	56
Shannon headwaters	60	114
Middle & Lower Shannon	258	281
Midlands	277	227
Southwest	7	7
Wexford	8,092	7,984
Ireland total	**10,340**	**10,266**
Population estimate	–	**18,854**

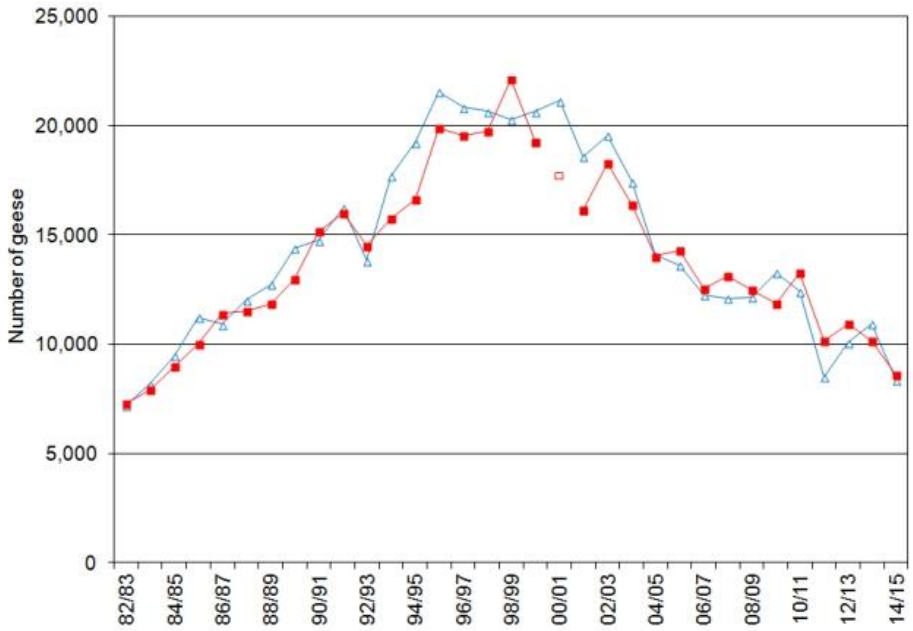

Figure 2. Coordinated count totals of Greenland White-fronted Geese in Britain, 1982/83-2014/15, showing autumn (open triangles) and spring (filled squares) census results for each season. Note the missing value for spring 2001 (unfilled square) due to the outbreak of Foot and Mouth Disease that year (from Fox et al. *2015).*

2. Breeding success

A total of 6,563 Greenland Whitefronts were aged at 24 sites across Britain during 2014/15 (Table 2), of which 12.9% were young birds; slightly lower than in 2013/14 (14.2%) though higher than the previous ten-year mean (11.4% for 2004/05–2013/14) (Figure 3). Mean brood size was 2.73 young per successful pair (181 families assessed), fractionally lower than the previous winter (2.88) and also the previous ten-year mean (3.08 for 2004/05–2013/14).

Across the British sites, the percentage of young ranged from 0% to 35.2%, with seven sites recording 15% or more. On Islay, the percentage young was 14.7% (compared with 17.0% in 2013/14), whilst elsewhere in Britain 11.0% of the birds aged were young (compared with 11.6% in 2013/14).

In Ireland, 4,092 birds were aged at 12 sites, resulting in an overall percentage young of 6.1%; slightly lower than the previous winter (6.9%) and also the previous five-year mean (8.6% for 2009/10–2013/14). Overall, the mean brood size was 2.59 young per successful pair (91 broods assessed); lower than recorded in 2013/14 (2.88) and also the previous five-year mean (2.90 for 2009/10–2013/14) (Table 2; Figure 4).

The percentage young varied between sites ranging from 0% to 38.5%, with only two sites recording over 15%. The majority of the birds were aged at Wexford (3,578), with flocks there holding 5.8% young, whilst a higher percentage of young was seen amongst flocks elsewhere in Ireland (8.2%; n = 514).

Table 2. Percentage of young and mean brood size of Greenland White-fronted Geese in Britain and Ireland during winter 2014/15 (Fox et al. *2015).*

Region	Percentage (%) of young (n)	Mean brood size (n)
Islay	14.7 (3,420)	3.11 (75)
Britain excluding Islay	11.0 (3,163)	2.47 (106)
Britain overall	**12.9 (6,563)**	**2.73 (181)**
Wexford	5.8 (3,578)	2.69 (74)
Rest of Ireland	8.2 (514)	2.18 (17)
Ireland overall	**6.1 (4,092)**	**2.59 (91)**

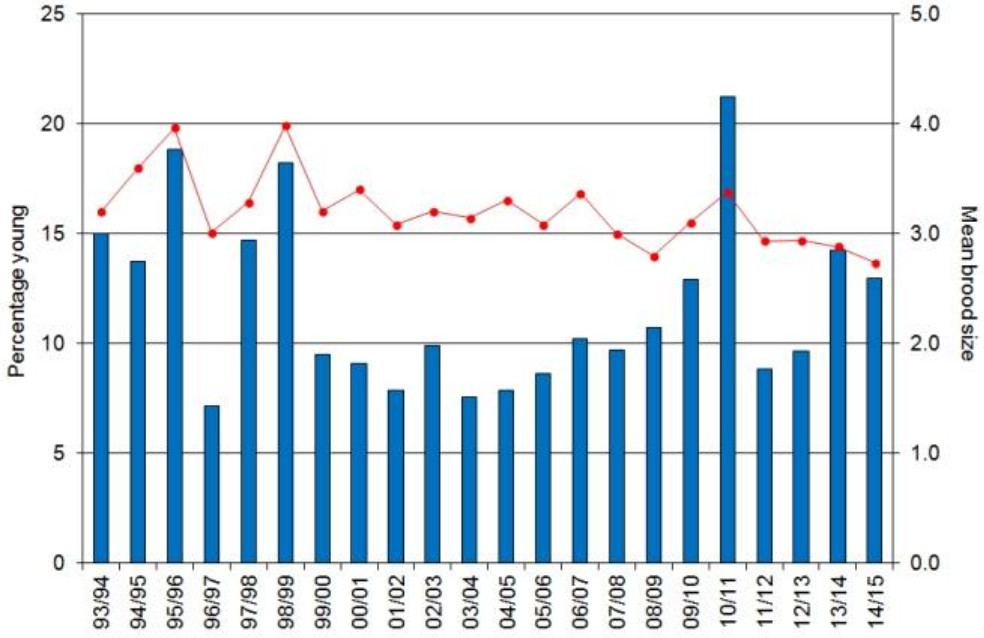

Figure 3. The percentage of young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Britain, 1993/94 – 2014/15 (from Fox et al. 2015).

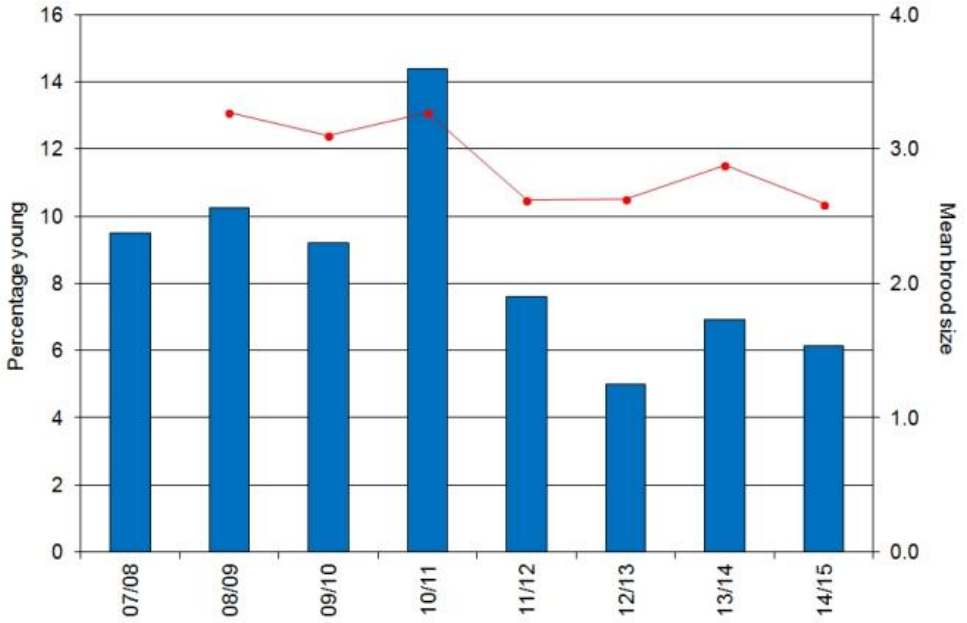

Figure 4. The percentage of young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Ireland, 2007/08 – 2014/15 (from *Fox* et al. *2015*).

3. Discussion

Despite what appeared to be some level of stability between 2008 and 2013, there have since been further declines in the Greenland White-fronted Goose population, with the 2015 population estimate being 47% lower than the peak in 1999, and the lowest since 1984. The main driver of the decline is still thought to be the population's consistently poor breeding success, as results from survival analyses of marked birds have not suggested that mortality within the population has been higher in recent years compared with previous years.

Numbers at many sites are mirroring that of the whole population, with declines observed across the entire wintering range. Islay in particular has seen a gradual decrease in the size of its flock, which in 2015 was 71% lower than the peak count recorded at the site in 1999 (Figure 5).

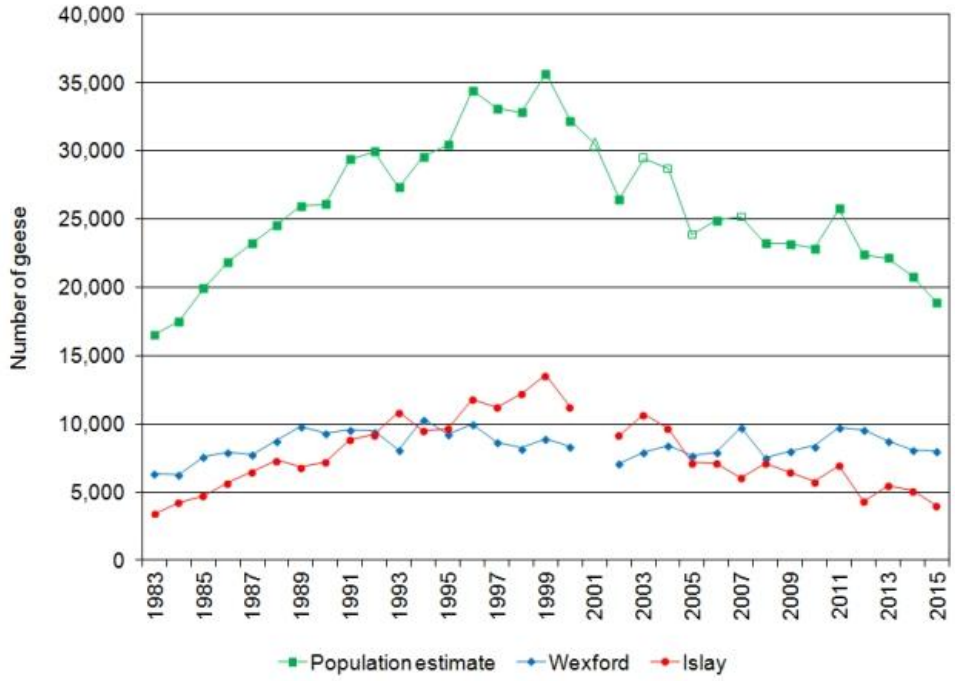

Figure 5. The annual population estimate of Greenland White-fronted Goose (green squares), with numbers recorded at Wexford (blue diamonds) and Islay (red circles), spring 1983-2015 (from Fox et al. *2015).*

In comparison, the Wexford flock does not seem to have been affected quite so much by the overall decline when compared with other resorts. Unlike on Islay, numbers at Wexford have been fluctuating since the peak in the population in 1999 and have not noticeably declined to the same extent (Figure 5). A recent PhD study, undertaken by Mitch Weegman at the University of Exeter (see *GooseNews* 11:6 and 12:8), has suggested that Wexford must be attracting substantial numbers of immigrants from other wintering resorts in order to sustain its total numbers, particularly given the low productivity observed among birds at the site and the overall decline in the population.

The 2015 population estimate for the Greenland White-fronted Goose is the first to have fallen below 20,000 birds since 1985. This result triggers an alert under the AEWA International Single Species Action Plan for the conservation of the population, which means there are grounds to hold a meeting of the Range States to discuss responses to the continued population decline. Similarly, a second trigger is the low annual breeding success of birds wintering at Wexford, which has been below 7% young for three consecutive seasons.

For further information see Fox *et al.* (2015).

4. References

Fox, A.D., I. Francis, D. Norriss & A. Walsh. 2015. *Report of the 2014/2015 International Census of Greenland White-fronted Geese.* Greenland White-fronted Goose Study / National Parks & Wildlife Service report, Kalo.

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