

WWT/JNCC/SNH Goose & Swan Monitoring Programme
 survey results 2013/14
 Pink-footed Goose *Anser brachyrhyncus*

1. Abundance

The 54th consecutive Icelandic-breeding Goose Census took place during autumn and winter 2013, providing information on the abundance and distribution of Greenland/Iceland Pink-footed Geese. A full account of the census can be found in Mitchell (2014). Counts were conducted by a network of volunteer observers and professional conservation staff over the weekends of 12/13 October and 9/10 November 2012. Coverage in the UK was good and similar to the preceding year, with 131 sites visited in October and 151 in November. Outside the UK, counts were made at several sites in Iceland during October, when some birds had yet to leave breeding areas.

Totals of 372,074 and 279,441 Pink-footed Geese were counted in October and November, respectively (Table 1). The total numbers counted in October and November were 5.2% higher and 11.2% lower than the respective counts in the previous year. Coverage was good and no estimated counts needed to be added to the unadjusted total, and the peak winter total in October was used to derive a population estimate of 372,074 geese. This represents an increase of 3.6% since 2012/13 (Figure 1), when a population size of 359,175 individuals was estimated.

East central Scotland held the highest number of birds in October with a high percentage also present in northeast Scotland, Southeast Scotland/Northeast England and west England (Table 1). By November, a large movement of birds into west England (southwest Lancashire) and east England (Norfolk) had occurred.

Table 1. Regional distribution of Pink-footed Geese during October and November 2013 (nc = not counted).

Region	October	November
Iceland	5,000	nc
North Scotland	30,007	23,585
Northeast Scotland	56,635	56,502
East Central Scotland	91,630	57,646
Southeast Scotland/northeast England	63,827	29,293
Southwest Scotland/northwest England	16,023	14,122
West England	82,389	46,459
East England	26,484	51,834
<i>Total Counted</i>	372,074	279,441
<i>Estimated counts</i>	-	-
<i>Adjusted total</i>	372,074	279,441
Population estimate	372,074	

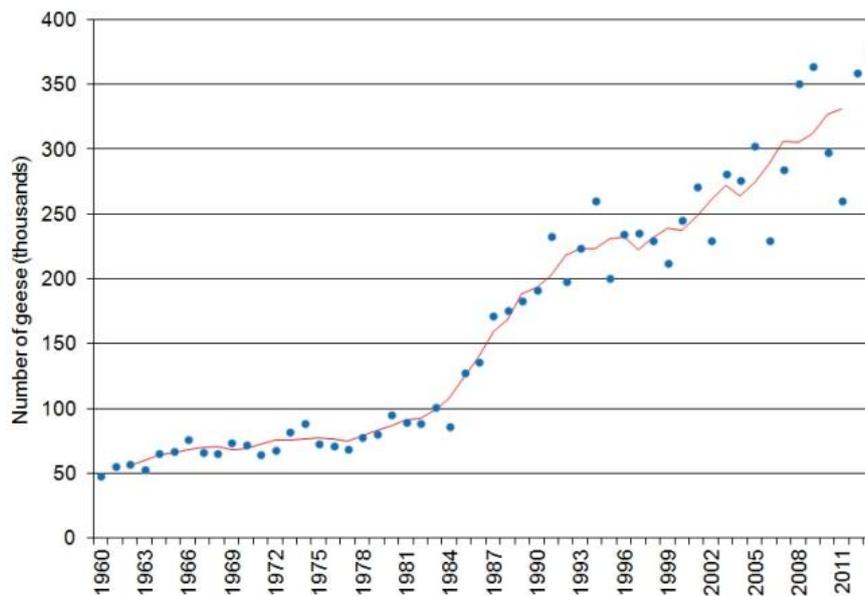


Figure 1. Annual census-derived estimates of Pink-footed Goose population size, 1960-2013. Five-year running mean shown as red line. (e.g. mean for 2011 is from population estimates for 2009-2013).

2. Breeding success

Between late September and early November, a total of 7,050 Pink-footed Geese, in 22 flocks, was aged at various localities throughout Scotland and west England (Table 2). This sample, expressed as a percentage of the 2013/14 census-derived population estimate, was 1.9%. The brood size of 121 families was also determined during this period.

Breeding success was slightly lower than the mean for the previous decade, with 17.1% young (mean 2003-2012: $18.6\% \pm 1.22$ SE) (Figure 2). The mean brood size of successful pairs was 2.16 goslings, which was slightly higher than the mean recorded during the previous ten years (mean 2003-2012: 2.08 ± 0.07 SE).

Age counts were undertaken in several regions, but at different times during the autumn. This leads to differences in the percentage of young and mean brood sizes recorded both spatially and temporally. Successful families tend to arrive early on the winter quarters, with non-breeders and unsuccessful pairs arriving later (see Patterson & Hearn 2006) leading to a higher percentage of young recorded earlier in the autumn. For example 32.5% young was recorded in early September in NE Scotland, compared to 8.2% young recorded in late October in EC Scotland. Traditionally, all age counts have been collated and an overall figure calculated, but the results from autumn 2013 highlight the wide variation in age assessments both geographically and temporally and collating all the figures masks these differences. The sample size was low during autumn 2013 compared to previous years and this may have affected the overall estimate.

Table 2. The percentage of young and mean brood size of Pink-footed Geese in autumn 2013.

Region	Time period	Total aged	Percentage of young (%)	Number of broods	Mean brood size
Northeast Scotland	Early Sept	1,000	32.5	35	2.26
	Early Oct	1,500	24.1	37	2.11
	Late Oct	300	20.0	1	2.00
East Central Scotland	Late Oct	1,602	8.2	16	1.63
	Early Nov	2,027	11.3	29	2.45
West England	Late Oct	621	16.6	3	1.67
Overall		7,050	17.3	121	2.16

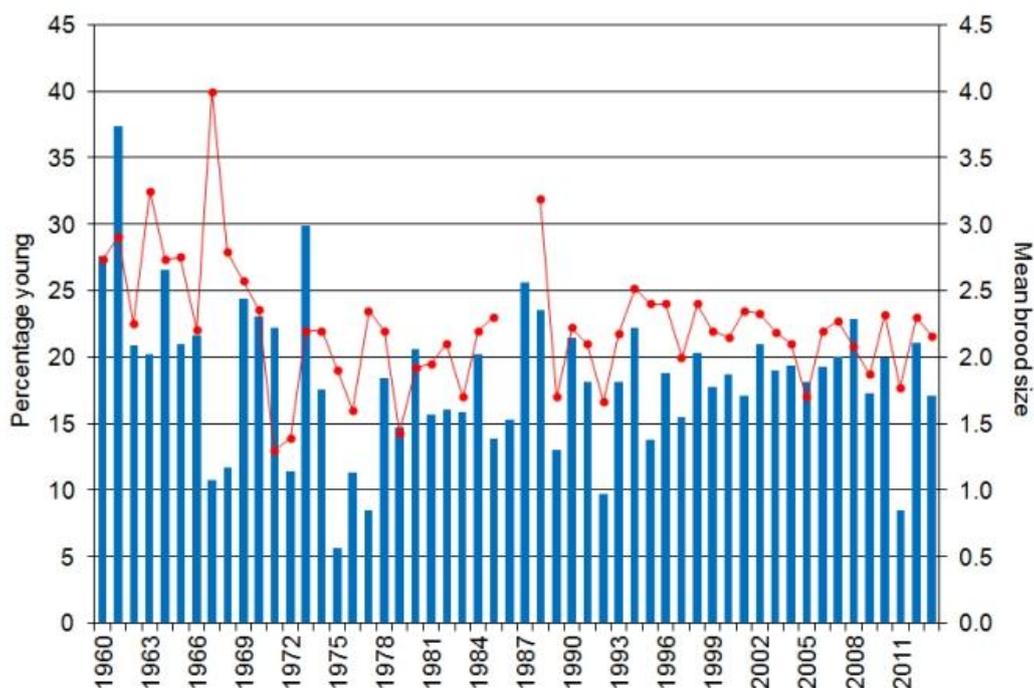


Figure 2. The percentage of young (blue columns) and mean brood size (red circles) of Pink-footed Geese, 1960-2013.

3. Discussion

The mass arrival of Pink-footed Geese in early autumn 2013 was not as pronounced as in the previous year, although early large numbers were reported from some key sites. For example, at Montrose Basin, Angus, 63,844 Pinkfeet were counted on 21 September 2012, but, in 2013, the maximum September count was only 18,000 birds on 29 September. Numbers there increased to 46,769 by 8 October, but had fallen to 32,891 by the time of the IGC count five days later. The departure of Pink-footed Geese from interior Iceland was affected by heavy snow in early September which caused many geese to move south within Iceland (A. Sigfússon in litt.). Two Pink-footed Geese fitted with Global Positioning System (GPS) tags moved from the interior of eastern Iceland, where they had been caught earlier in the summer, to the south coast of Iceland on 15 September. They fed here for a week and one of the tagged birds was recorded departing from Iceland to cross the North Atlantic on 22 September. It is well established that some key wetland sites support higher numbers of geese soon after they arrive in northern Britain, and numbers decline as geese move south within Scotland or onto Lancashire and Norfolk.

The 2013 population estimate of 372,074 was 3.6% higher than the figure for October 2012 (359,175) and the highest population estimate ever recorded. Breeding success in 2013 was about average and appears to be easily compensating for annual mortality. Both the 2012 and 2013 population estimates confirm that the counts of autumn 2011, and probably in 2010, underestimated the total number of geese in the population in those years.

Despite the year on year variation in counts, the long term trend is one of continued increase (Figure 1), although if the undercounts in 2010 and 2011 are not considered, the population has been between c. 351,000 and c. 372,000 since 2008, and may have reached another plateau of growth.

The number of sites holding more than 1% of the 2013 population estimate (3,720 birds) was 25 in October and 26 in November. Twelve sites held over 10,000 birds in October, and eight in November. Combined counts from the 25 sites exceeding 1% of the population estimate accounted for 88.8% of the total October count and numbers at the top five sites alone held 36.6% of the population estimate.

Pink-footed Goose breeding success in summer 2013, at 17.1%, was slightly lower than the long term average of 18.5%. Reports from Iceland suggest reasonable weather during the spring and summer months. The average productivity was also confirmed by the percentage of young in the Iceland bag; at 27.6%, this was considered just lower than the recent average (29.1% for the ten year period 2003 to 2012) (A. Sigfússon in litt.). Hunting of Pink-footed Geese in Iceland appears stable with 15,291 shot in 2012 (the year for which the most recent data are available) compared to a mean of 14,317 for the ten year period 2002 to 2011 (no data were available for 2003). Unfortunately, no comparable data exists for the number shot in the UK.

4. Acknowledgements

As ever, thanks are extended to the many IGC counters who provided the basis of the population assessments. Of particular importance is the role of the Local Organisers. Ian Patterson kindly provided additional age counts. G. Gudmundsson and A. Sigfússon provided information from Iceland.

5. References

Mitchell, C. 2014. *Status and distribution of Icelandic-breeding geese: results of the 2013 international census*. Wildfowl & Wetlands Trust Report, Slimbridge.

This report should be cited as:

WWT. 2014. *Goose & Swan Monitoring Programme: survey results 2013/14 Pink-footed Gose Anser brachyrhyncus*. WWT/JNCC/SNH, Slimbridge.

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Goose & Swan Monitoring