

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2013/14

Dark-bellied Brent Goose *Branta Bernicla bernicla*

1. Abundance

The abundance of Dark-bellied Brent Geese in the UK during 2013/14 was monitored through the Wetland Bird Survey (WeBS). Results are presented in survey reports which are available on the WeBS website.

2. Breeding success

For the 29th consecutive winter, experienced volunteer observers assessed the breeding performance of Dark-bellied Brent Geese in winter 2013/14 (for methods see Hall 2008). Geese were aged at a total of 77 localities within 10 estuaries or coastal areas on the east and south coasts of England, from North Lincolnshire to the Exe Estuary in Devon (Figure 1 & Table 1). Data were collected between 22 September 2013 and 25 March 2014.

Of the 156 flocks assessed, the majority were aged in November (34.6%), with 28.8% aged in October and 14.7% in December. Fewer flocks were aged in September (1.3%), January (7.7%), February (9.0%) and March (3.8%).

A total of 54,158 geese were aged; a decrease of 25% on the number aged in 2012/13 and 29% lower than the previous five-year mean. The largest numbers were aged on the Thames Estuary and North Norfolk Coast, with 14,729 and 11,502 geese aged respectively (Figure 1 and Table 1). Between 5,000 and 10,000 birds were aged at the North Lincolnshire Coast, Crouch and Blackwater Estuaries. Sample sizes at all other sites were smaller than 5,000 birds. The overall percentage of young birds was 15.4% and, of the 288 broods recorded, the mean brood size was 2.49 (± 0.08 SE) young per successful pair (Figure 2).



Figure 1. Sites in the UK at which Dark-bellied Brent Geese were aged during winter 2013/14. See Table 1 for key to sites.

Table 1. Numbers of Dark-bellied Brent Geese aged at UK estuaries and coastal areas in winter 2013/14.

Estuary	Sample flocks			Number of sites	Total aged	Percentage young (%)	Mean brood size	SE
	First count	Last count	n					
1 Exe Estuary	08 Oct	20 Mar	11	7	2,590	12.6	1.67	0.33
2 Poole Harbour	13 Mar	13 Mar	1	1	40	17.5	-	-
3 Beaulieu Estuary	17 Nov	03 Feb	3	2	1,153	6.0	2.16	0.13
4 Thames Estuary	28 Sep	14 Dec	23	7	14,729	19.7	2.83	0.15
5 Roach Estuary	16 Feb	16 Feb	1	1	200	17.0	-	-
6 Crouch Estuary	24 Oct	25 Mar	6	4	6,882	17.6	2.50	0.29
7 Blackwater Estuary	15 Oct	27 Feb	11	8	5,163	14.5	-	-
8 Stour Estuary	22 Sep	16 Feb	37	15	2,509	12.2	2.00	0.58
9 North Norfolk Coast	27 Oct	07 Mar	31	11	11,502	12.7	2.73	0.17
10 North Lincolnshire Coast	04 Oct	03 Feb	32	21	9,390	13.7	1.88	0.14
Total	22 Sep	25 Mar	156	77	54,158	15.4	2.49	0.08

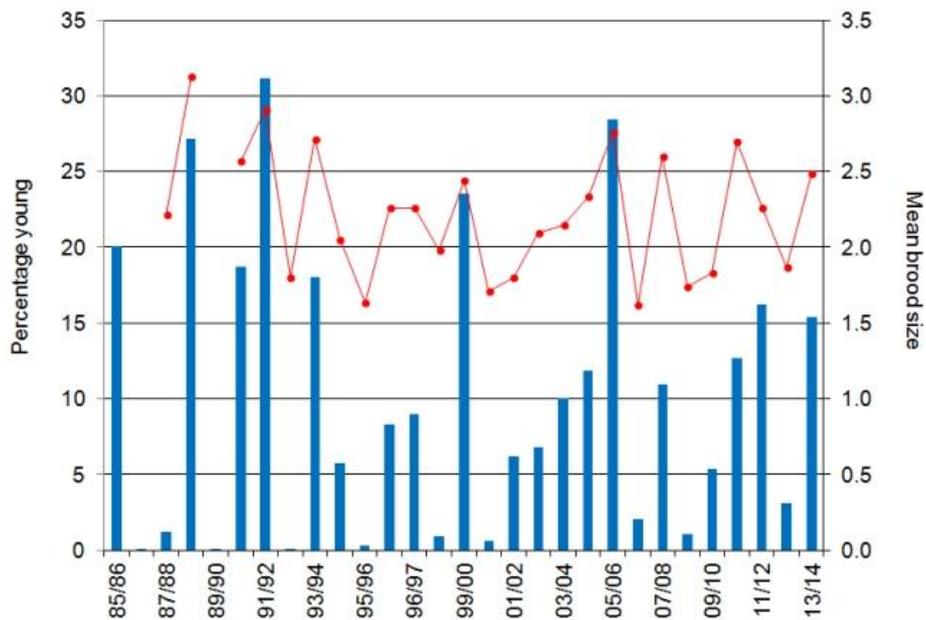


Figure 2. The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese recorded in the UK, 1985/86-2013/14. No brood size data were collected in 1985/86, 1986/87 or 1989/90.

The percentage of young present in flocks fluctuated throughout the winter, with the peak of 18.9% occurring in October; however, the sample sizes in October and November were much larger than during other months (Figure 3 and Table 2). The mean brood size of successful pairs fell from a peak of 2.61 (± 0.11 SE) in October to its lowest in January (1.89; ± 0.26 SE), before fluctuating during the last two months.

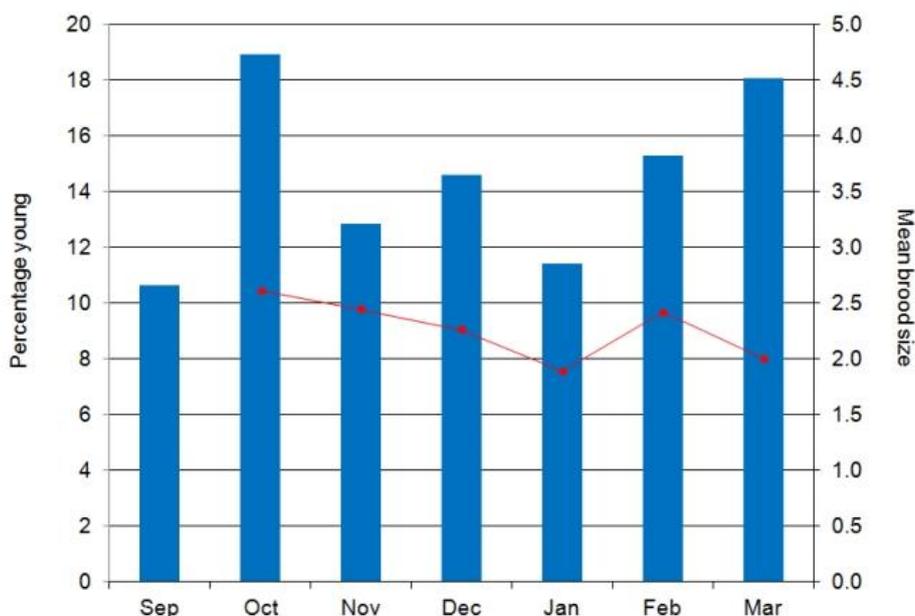


Figure 3. The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK during winter 2013/14.

Table 2. The percentage of young and mean brood size of Dark-bellied Brent Geese in the UK during winter 2013/14.

Month	Percentage of young		Mean brood size		
	%	n	Mean	SE	n
Sep	10.6	1,949	-	-	-
Oct	18.9	19,661	2.61	0.11	163
Nov	12.8	17,979	2.44	0.14	68
Dec	14.6	5,319	2.26	0.24	31
Jan	11.4	2,990	1.89	0.26	9
Feb	15.3	4,775	2.42	0.34	12
Mar	18.0	1,485	2.00	0.32	5
Total	15.4	54,158	2.49	0.08	288

The percentage of young within individual flocks varied from 0% to 58.7%. Almost half the flocks (47.4%; n = 74) contained 5–15% young, whilst 28.8% (n = 45) held 15–30%. Just under 11% (n = 17) of flocks held 30–50% young and 16 flocks (10.3%) held less than 5%, 12 of which held no young at all (Figure 4). Very few flocks (2.6%; n = 4) held over 50% young.

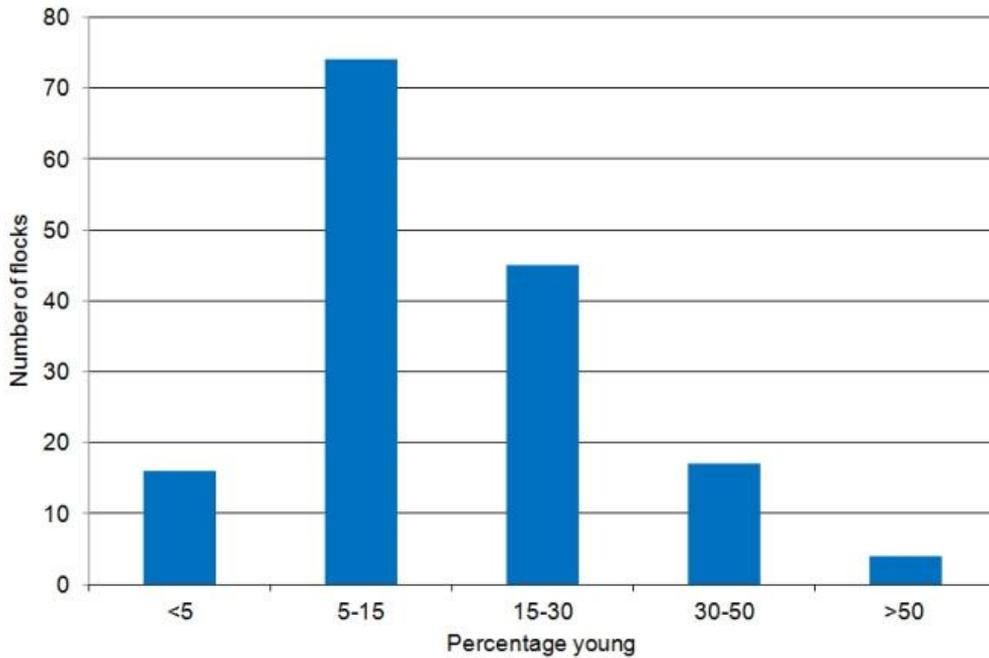


Figure 4. Frequency distribution of the percentage of young in individual flocks (n=156) of Dark-bellied Brent Geese in the UK during winter 2013/14.

The percentage of young was highest amongst flocks of fewer than 100 geese (18.7%) and the size class of 1,000–1,999 birds (18.1%). The lowest was seen amongst flocks of 2,000–6,000 geese (12.3%). Mean brood size was only recorded amongst flocks of fewer than 1,000 birds, and ranged from 2.23 to 2.44 young per successful pair (Figure 5).

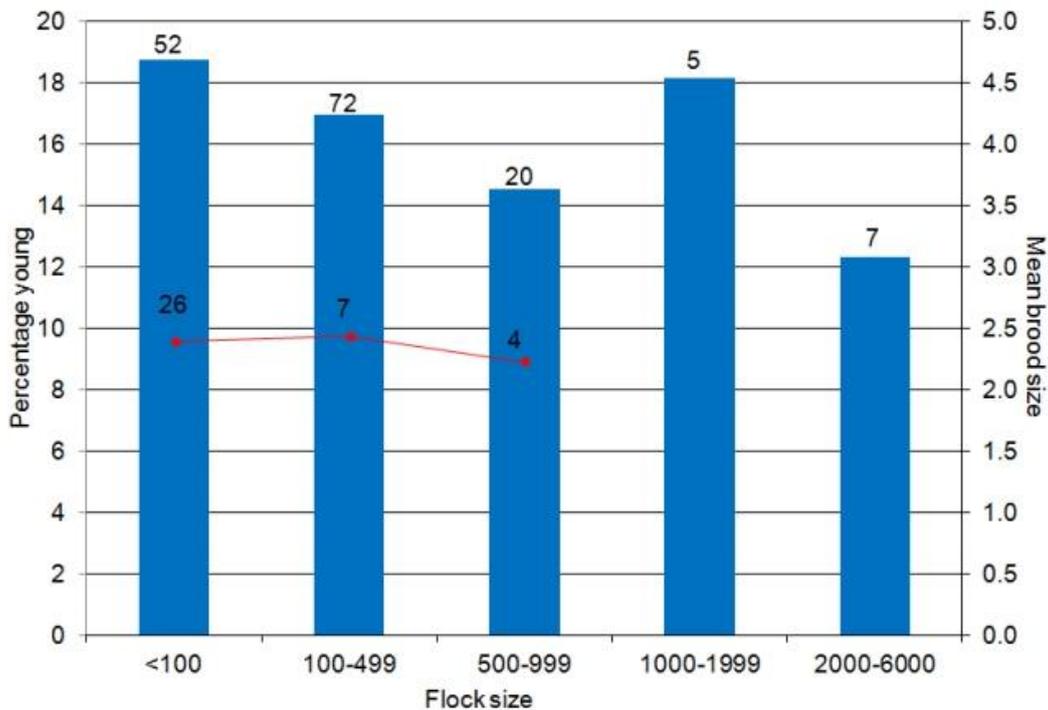


Figure 5. The percentage young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK in flocks of different sizes during winter 2013/14. Sample sizes are presented on the graph.

Dark-bellied Brent Geese were recorded on five main habitat types: water, intertidal (including *Enteromorpha* spp., *Ulva* spp., and *Zostera*), saltmarsh, grass and cereal fields, (including stubble

and oilseed rape). The majority of geese were aged on grass (34.5%) and intertidal (33.4%) habitats, whilst 23.1% were observed in cereal fields. Notably lower numbers were recorded on water (5.1%) and on saltmarsh (3.8%).

The highest percentage of young was seen amongst flocks on intertidal and saltmarsh habitats (18% for both categories), and the lowest amongst flocks recorded on water (12.3%) (Figure 6). Mean brood size varied between 2.13 (± 0.18 SE) and 2.76 (± 0.14 SE) young per successful pair.

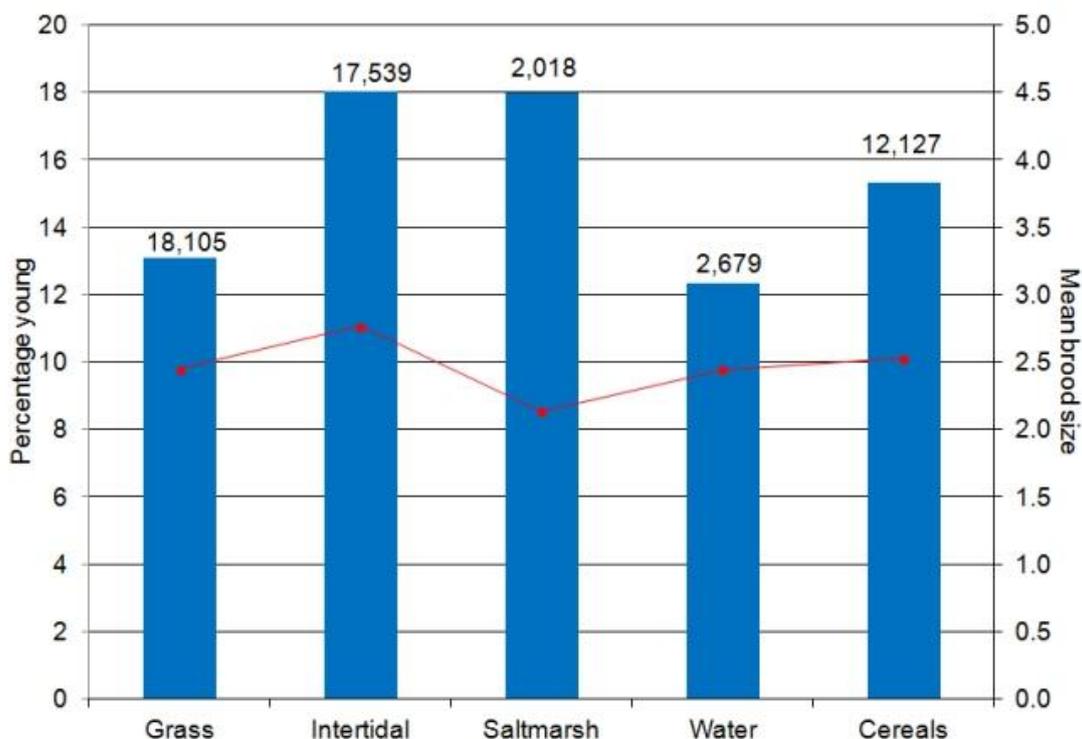


Figure 6. The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK recorded in different habitat groups during winter 2013/14. Sample sizes are given above the columns.

3. Discussion

Results from age assessments made at wintering sites in the UK indicate that the breeding success of Dark-bellied Brent Geese in 2013 was above the previous ten year average ($10\% \pm 2.58$ SE), and 12.3% higher than the previous year. Mean brood size was higher than in 2012/13, and above the previous ten-year mean (2.19 ± 0.13 SE).

No data on the breeding success among birds wintering outside of the UK are available at the current time, so it is uncertain how representative the estimates from the UK are. However, reports from the monitoring stations along the breeding grounds in Arctic Russia indicate that rodent and predator abundance were average to moderate in 2013 with Arctic Fox *Vulpes lagopus* occurrences dropping sharply in 2013 compared to a record high in 2012. Together, these factors are likely to have positively influenced the breeding success of Dark-bellied Brent Geese, producing a better breeding season than in 2012.

4. Acknowledgements

As ever, thanks are extended to the many volunteer counters who provided Dark-bellied Brent Goose age counts.

5. References

Hall, C. 2008. *The breeding success of Dark-bellied Brent Geese Branta bernicla bernicla in 2007, as assessed in the UK*. Wildfowl & Wetlands Trust Report, Slimbridge.

This report should be cited as:

WWT. 2014. *Goose & Swan Monitoring Programme: survey results 2013/14 Dark-bellied Brent Goose* Branta bernicla bernicla. WWT/JNCC/SNH, Slimbridge.

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Goose & Swan Monitoring