

# WWT/JNCC/SNH Goose & Swan Monitoring Programme

## survey results 2012/13

### Dark-bellied Brent Goose *Branta bernicla bernicla*

**Corrections were made to this account in August 2014**

#### 1. Abundance

The abundance of Dark-bellied Brent Geese in the UK during 2012/13 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 twenty-eight consecutive winter, experienced volunteer observers assessed the breeding performance of Dark-bellied Brent Geese in winter 2012/13 (for methods see Hall 2008). Geese were aged at a total of 101 localities within 13 estuaries or coastal areas on the English east and south coasts, from the Wash to the Exe Estuary in Devon (Figure 1 & Table 1). Data were collected between 5 October 2012 and 1 April 2013.

Of the 201 flocks assessed, the majority were aged in November (29.4%) and December (25.4%), with 17.9% recorded in January and 14.9% in October. Fewer flocks were aged in February (8.5%), March (2.5%) and April (1.5%).

A total of 72,247 geese were aged; a decrease of 10.1% on the number aged in 2011/12. The largest numbers were aged at Thames Estuary (17,124) and Blackwater Estuary (13,411) (Figure 1 & Table 1). Between 4,000 and 10,000 individuals were aged at the The Wash, North Norfolk Coast, Hamford Water and The Solent. Sample sizes at all other sites were smaller than 4,000 birds.

The overall proportion of young birds was 3.1% and of the 182 broods recorded, the mean brood size was 1.87 ( $\pm 0.08$  SE) young per successful pair (Figure 2).

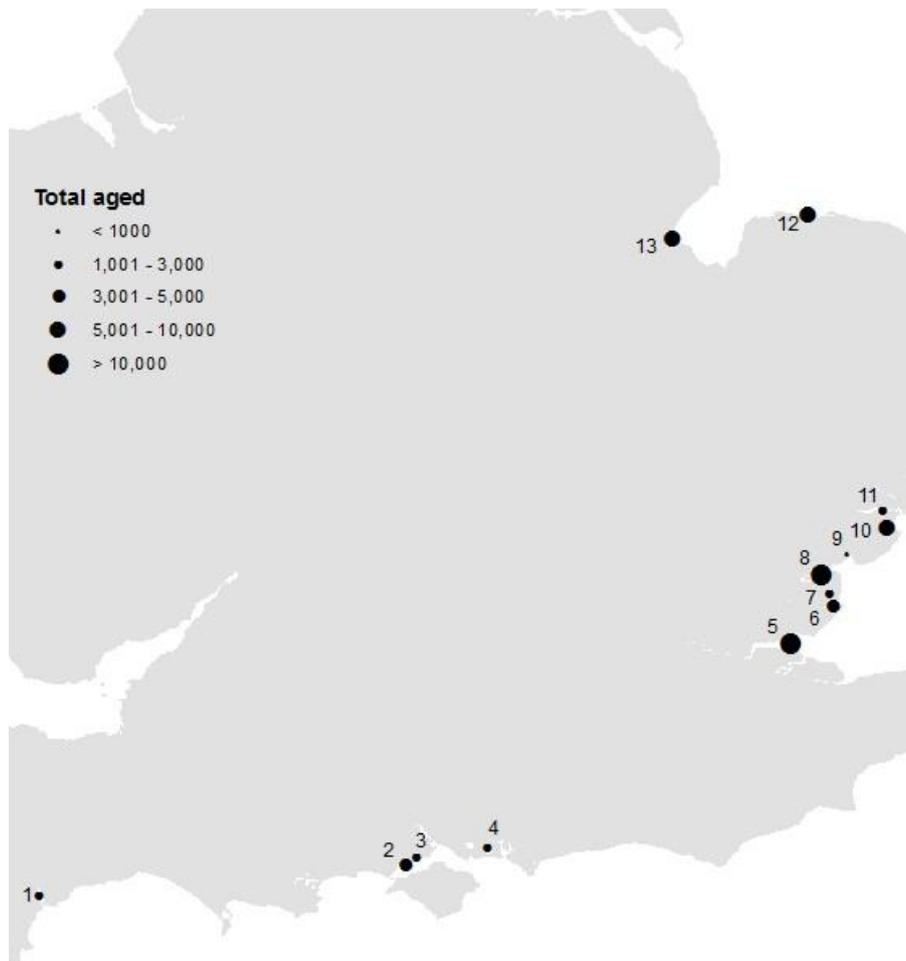


Figure 1. Sites in the UK at which Dark-bellied Brent Geese were aged during winter 2012/13. See Table 1 for key to sites.

Table 1. Numbers of Dark-bellied Brent Geese aged at British Estuaries and coastal areas in winter 2012/13.

Estuary	Sample flocks			Number of sites	Total aged	Proportion of young (%)	Mean brood size	SE
	First count	Last count	n					
1 The Exe	11-Nov	21-Mar	8	5	1,782	1.3		
2 The Solent	10-Oct	05-Feb	18	5	4,179	3.2	2.38	0.42
3 Beaulieu Estuary	07-Oct	09-Dec	5	3	1,157	2.3	1.00	0.00
4 Langstone Harbour	05-Oct	03-Nov	6	5	2,828	0.4	1.71	0.57
5 Thames Estuary	07-Oct	04-Feb	13	4	17,124	2.5		
6 Dengie Flats	13-Jan	13-Jan	1	1	1,059	2.9	1.96	0.12
7 Crouch Estuary	08-Dec	28-Jan	5	3	3,114	4.7		
8 Blackwater Estuary	31-Oct	21-Feb	25	17	13,411	3.8	4.00	0.00
9 Colne Estuary	27-Dec	27-Dec	1	1	919	4.1		
10 Hamford Water	29-Dec	07-Mar	7	7	6,859	4.0	1.71	0.29
11 Stour Estuary	14-Oct	28-Feb	60	11	2,331	0.6		
12 North Norfolk Coast	29-Oct	01-Apr	20	10	7,703	3.6	1.88	0.19
13 The Wash	10-Nov	12-Feb	32	29	9,781	2.8	1.59	0.13
<b>Total</b>	<b>05-Oct</b>	<b>01-Apr</b>	<b>201</b>	<b>101</b>	<b>72,447</b>	<b>3.1</b>	<b>1.87</b>	<b>0.07</b>

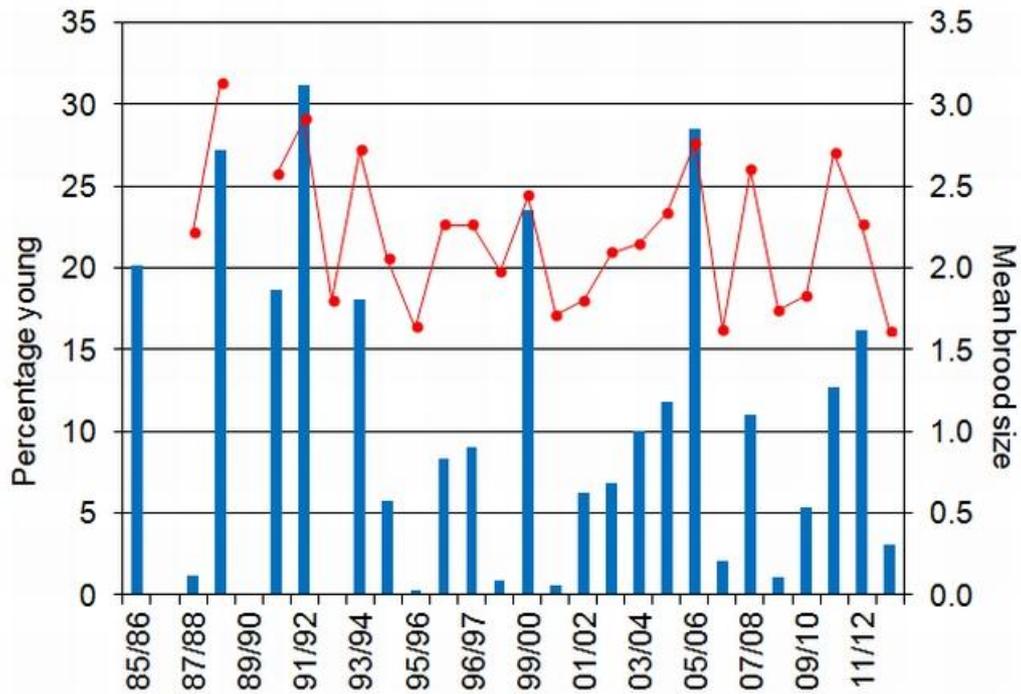


Figure 2. The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese recorded in the UK, 1985/86 – 2012/13. No brood size data were collected in 1985/86 or 1989/90.

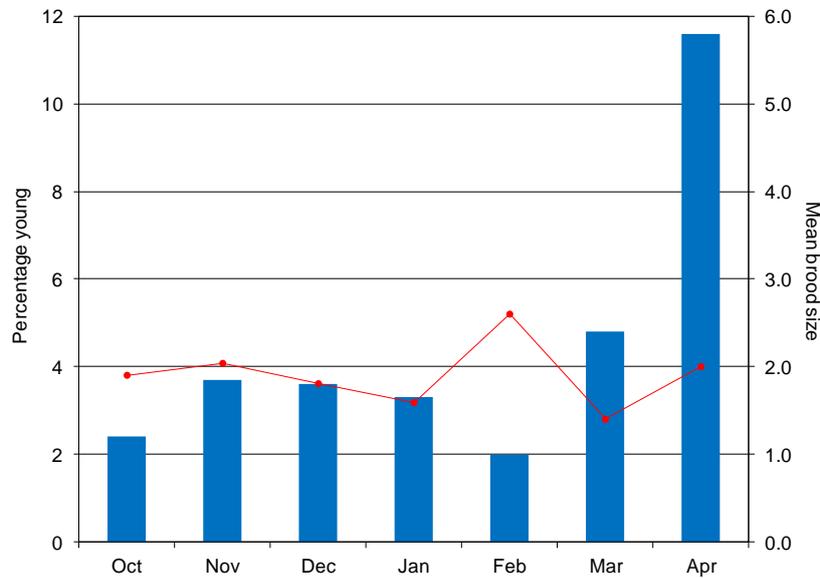


Figure 3. The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK during winter 2012/13.

Table 2. The proportion of young and mean brood size of Dark-bellied Brent Geese in the UK during winter 2012/13.

Month	Proportion of young		Mean brood size		
	%	n	Mean	SE	n
Oct	2.4	20,763	1.90	0.10	92
Nov	3.7	12,433	2.03	0.23	26
Dec	3.6	14,688	1.80	0.21	31
Jan	3.3	18,160	1.59	0.18	22
Feb	2.0	4,855	2.60	0.68	5
Mar	4.8	1,150	1.40	0.24	5
Apr	11.6	198	2.00	0.00	1
<b>Total</b>	<b>3.1</b>	<b>72,277</b>	<b>1.87</b>	<b>0.08</b>	<b>182</b>

The proportion of young within individual flocks varied from 0% to 66.7%: 80.6% (n=162) contained 0-5% of young, of which 78 flocks held no young at all; 16.4% (n=33) held between 5-15% young; five flocks (2.5%) held 15-30% young; and one flock (0.5%) held greater than 50% young (Figure 4).

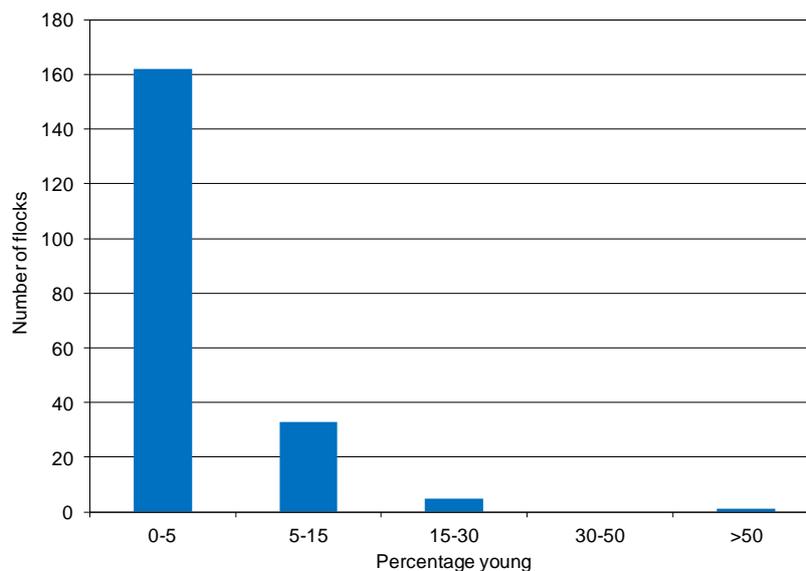


Figure 4. Frequency distribution of the percentage of young in individual flocks (n=201) of Dark-bellied Brent Geese in the UK during winter 2012/13.

The proportion of young was highest (4.5%) amongst flocks of fewer than 100 geese, whilst the number of young birds seen in flocks of the other size classes were 2.6% for flocks of 100-499 geese, 3.0% for flocks of 500-999 birds and 3.2% for flocks of 1,000-5,000 birds (Figure 5). Mean brood size varied between 1.74 ( $\pm 0.14$  SE) and 2.00 ( $\pm 0.33$  SE) young per successful pair.

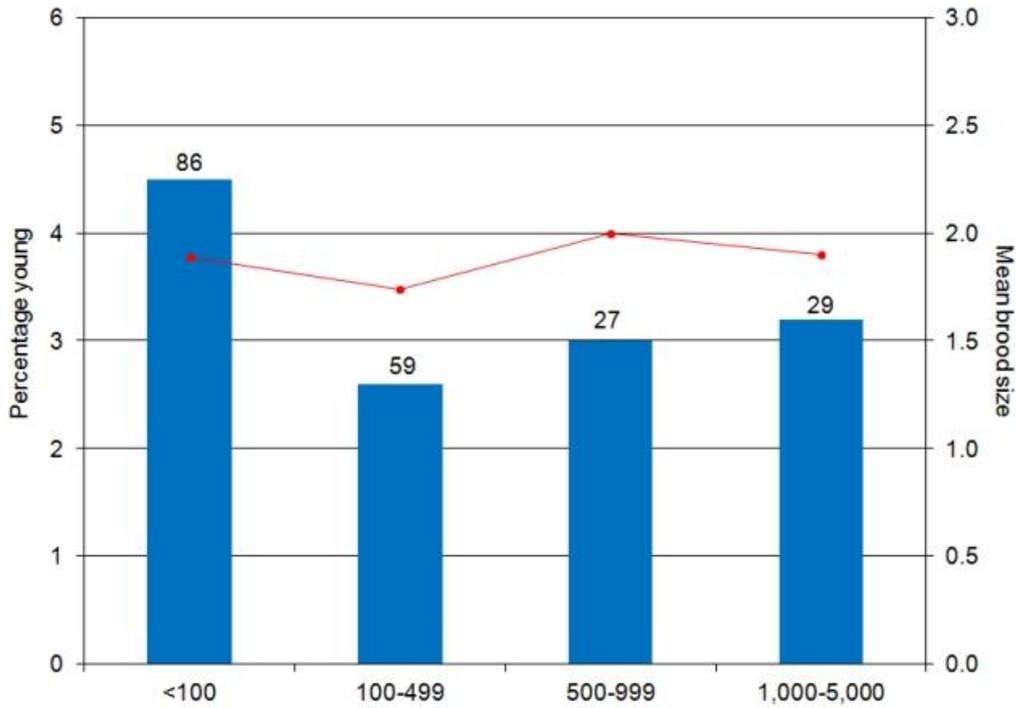


Figure 5. The percentage young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK in flocks of different sizes during winter 2012/13.

Geese were recorded at five main habitat types: i) water, ii) intertidal (including *Enteromorpha* spp., *Ulva* spp., and *Zostera* beds), iii) saltmarsh, iv) grass/pasture and v) cereal fields, including stubble and oilseed rape. The majority of geese (49.9%) were aged in grass habitats, whilst 26.1% were observed on intertidal habitats. Lower numbers were seen on cereals (10.6%), water (7.3%) and saltmarsh (6%) (Figure 6). The highest proportion of young was seen amongst flocks in winter cereal habitats (4.8%). The lowest was amongst flocks recorded on water (1.5%). Mean brood size varied between 1.62 ( $\pm 0.19$  SE) and 1.95 ( $\pm 0.11$  SE) young per successful pair.

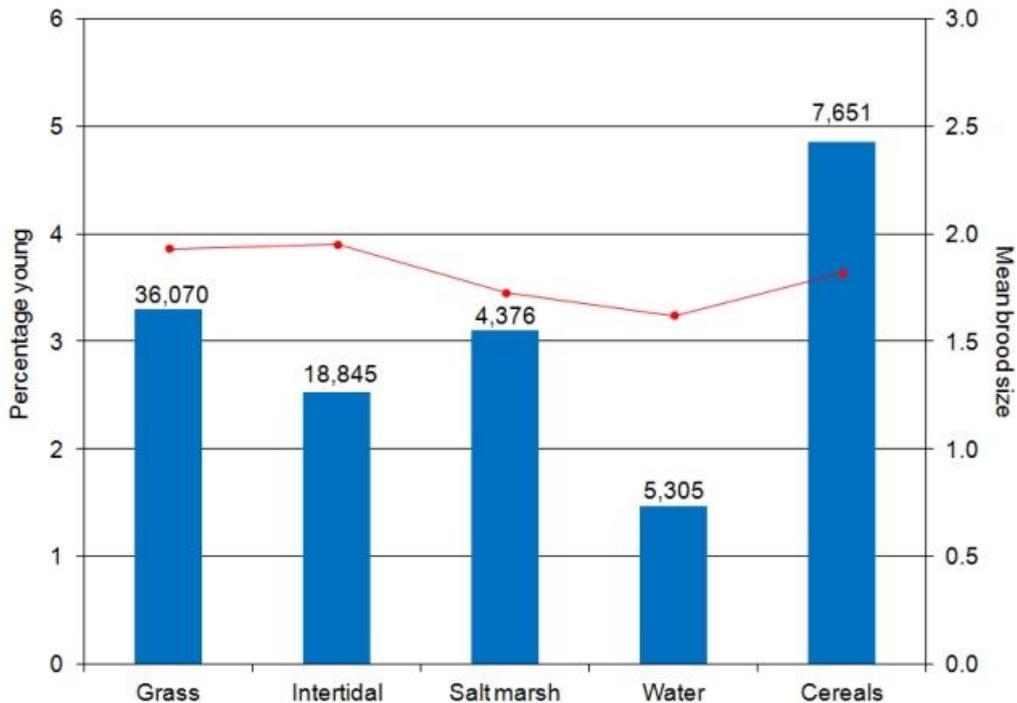


Figure 6. The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK recorded in different habitat groups during winter 2012/13. Sample sizes are given above the columns.

### 3. Discussion

Results from age assessments made at wintering sites in the UK indicate that the breeding success of Dark-bellied Brent Geese was well below average ( $10.5\% \pm 2.49$  SE); 2002/03-2011/12) and 13.1% lower than the previous year. Mean brood size was lower than in 2011/12 and well below the previous ten-year mean ( $2.20 + 01.2$  SE)

No data on breeding success among birds wintering outside the UK are available at the current time, so it is uncertain how representative the estimates from UK are. However, reports from monitoring stations along the breeding grounds in Arctic Russia indicate that rodent numbers were generally low in 2012 (data from International breeding conditions survey on Arctic birds) As breeding success of Dark-bellied Brent Geese is greatly influenced by interactions between rodent abundance and predator pressure the low rodent abundance and high numbers of Arctic Fox explain why the geese had a relatively poor breeding season in 2012.

### 4. 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. 2013. *Goose & Swan Monitoring Programme: survey results 2012/13 Dark-bellied Brent Goose Branta bernicla bernicla.* WWT/JNCC/SNH, Slimbridge.

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**Goose & Swan Monitoring**