WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2014/15

Dark-bellied Brent Goose *Branta bernicla bernicla*

1. Abundance

The abundance of Dark-bellied Brent Geese in the UK during 2014/15 was monitored through the Wetland Bird Survey (WeBS). Results are presented in survey reports which are available on the WeBS website.

2. Breeding success

The winter season of 2014/15 marked the 30th consecutive winter that experienced volunteer observers assessed the breeding performance of Dark-bellied Brent Geese (for methods see Hall 2008). Geese were aged at a total of 79 localities within 13 estuaries or coastal areas on the east and south coasts of England, from north Lincolnshire to the Exe Estuary, Devon (Figure 1 & Table 1). Data were collected between 3 October 2014 and 8 April 2015.

Of the 133 flocks assessed, the majority were aged in October (30.1%) with 24.1% aged in November, 18.0% aged in January and 15.0% aged in December. Fewer flocks were aged in February (7.5%), March (4.5%) and April (0.8%).

A total of 41,439 geese was aged; a decrease of 23.5% on the number aged in 2013/14 and 39.9% lower than the previous five-year mean. The largest sample came from the Thames Estuary with 8,308 geese aged. More than 7,000 geese were aged in north Norfolk (7,959), the Crouch Estuary (7,917) and the north Lincolnshire coast (7,844) (Figure 1 and Table 1). Between 1,000 and 1,954 birds were aged at The Solent, Chichester Harbour, Dengie Flats, the Blackwater Estuary and the Exe Estuary. Sample sizes were below 1,000 birds at the Stour (696), Roach (380), Beaulieu (322) and Medway (256) Estuaries.

The overall percentage of young birds was 23.0% and, of the 365 broods recorded, the mean brood size was 2.76 (±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 2014/15. See Table 1 for key to sites.*

Table 1. *Numbers of Dark-bellied Brent Geese aged at UK estuaries and coastal areas in winter 2014/15.*

Estuary	Sample	Number of	Total	Total aged	Percentage young (%)		
	First count	Last count	n			Mean brood size	SE
1 Exe Estuary	19/10/2014	18/01/2015	7	1,954	17.6	-	-
2 The Solent	03/10/2014	20/11/2014	7	1,432	23.6	3.29	0.31
3 Beaulieu Estuary	11/10/2014	15/02/2015	2	322	13.7	2.1	0.15
4 Chichester Harbour	14/10/2014	06/12/2014	10	1,436	21.7	3.08	0.27
5 Medway Estuary	12/11/2014	12/11/2014	2	256	29	3.38	0.77
6 Thames Estuary	04/10/2014	18/01/2015	12	8,308	20.6	2.8	0.15
7 Roach Estuary	07/12/2014	18/01/2015	2	380	44.8	-	-
8 Crouch Estuary	26/10/2014	25/05/2015	7	7,917	24	-	-
9 Dengie Flats	01/01/2015	01/01/2015	1	1,555	20.8	-	-
10 Blackwater Estuary	26/12/2014	08/04/2015	3	1,380	28.9	-	-
11 Stour Estuary	01/02/2015	01/02/2015	1	696	20.9	-	-
12 North Norfolk Coast	20/10/2014	02/03/2015	39	7,959	8.2	3.39	0.18
13 North Lincolnshire Coast	07/10/2014	21/02/2015	40	7,844	21.7	2.22	0.1
Total	**03/10/2014**	**08/04/2015**	**133**	**41,439**	**23**	**2.77**	**0.08**

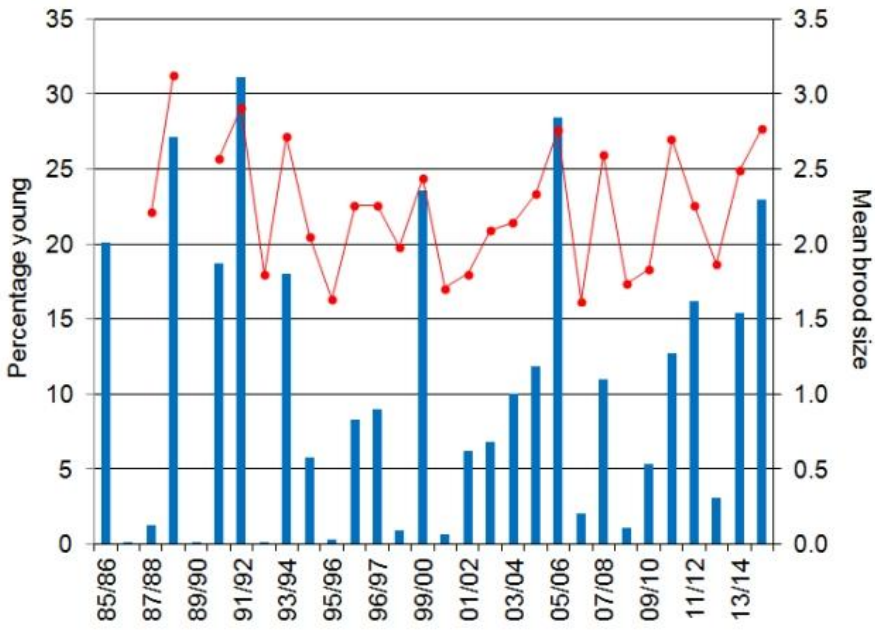

Figure 2. *The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese recorded in the UK, 1985/86-2014/15. No brood size data were collected in 1985/86, 1986/87 or 1989/90.*

The percentage of young present in flocks remained fairly consistent throughout the winter and above 20% in all months. The peak percentage of young occurred in April (29.1%); however, the sample sizes in April were small compared to other months (Figure 3 & Table 2). The mean brood size of successful pairs rose from 2.74 in October to a peak of 3.25 in March, and fluctuated between 2.5 and 3.0 during the intervening months.

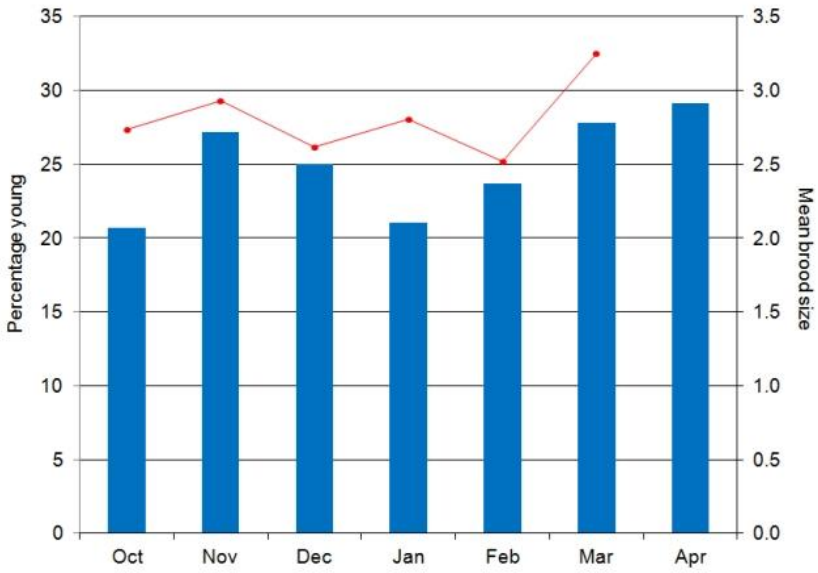

Figure 3. *The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK during winter 2014/15.*

Table 2. *The percentage of young and mean brood size of Dark-bellied Brent Geese in the UK during winter 2014/15.*

	Percentage of young		**Mean brood size**		
Month	**%**	**n**	**Mean**	**SE**	**n**
October	20.7	12,901	2.74	0.11	163
November	27.2	7,287	2.93	0.15	87
December	25.0	5,196	2.62	0.27	47
January	21.0	9,591	2.81	0.19	31
February	23.7	5,195	2.52	0.19	29
March	27.8	1,042	3.25	0.52	8
April	29.1	227	–	–	–
Total	**23.0**	**41,439**	**2.76**	**0.08**	**36**

The percentage of young within individual flocks varied from 0% to 70%. The majority of flocks (45.9%, n =61) contained 15-30% young, whilst 30.1% (n=40) contained 30-50% young. Considerably fewer flocks fell in the remaining categories: five flocks (3.7%) held less than 5% young, of which three held no young at all; 16 flocks (12.0%) held 5–15% young; and 11 flocks (8.3%) held greater than 50% young.

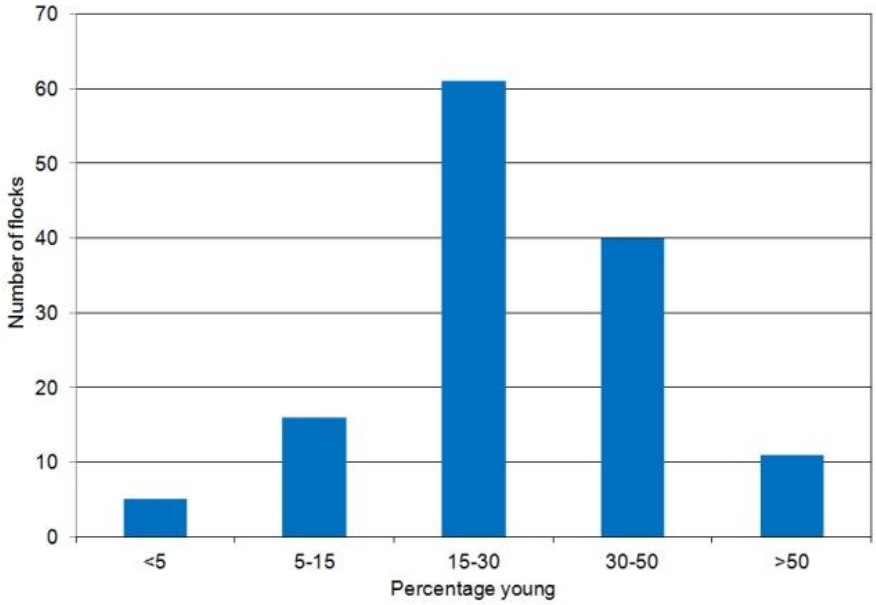

Figure 4. *Frequency distribution of the percentage of young in individual flocks (n=156) of Dark-bellied Brent Geese in the UK during winter 2014/15.*

The percentage of young was highest amongst flocks of fewer than 100 geese (31.7%) and was lowest amongst flocks of 1,000-1,999 geese (19%). Mean brood size was only recorded amongst flocks of fewer than 1,000 birds, and ranged from 2.65 to 2.95 young per successful pair (Figure 5).

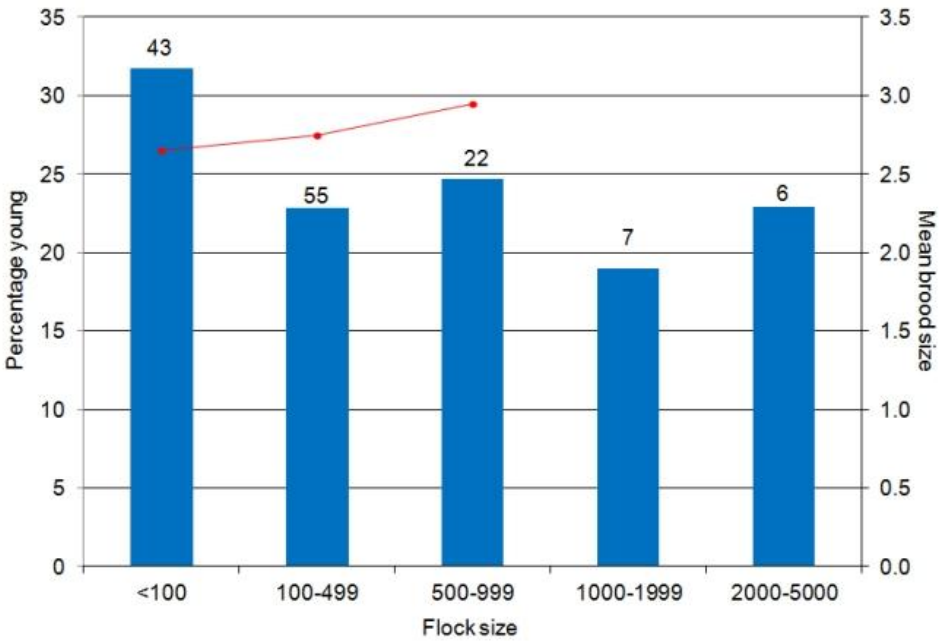

Figure 5. *The percentage young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK in flocks of different sizes during winter 2014/15. Sample sizes are presented on the graph.*

Dark-bellied Brent geese were recorded on five main habitat types: water, intertidal (including *Enteromorpha* spp., *Ulva* spp., and *Zostra*), saltmarsh, grass and cereal fields, (including stubble and oilseed rape). The highest percentage of young was seen amongst flocks feeding on winter cereals (24.9%), grass (24.1%) and water (21.4%) (Figure 6). Habitat type was not recorded for 1,342 geese. Mean brood size varied between 2.38 (±0.17 SE) and 3.22 (±0.21 SE).

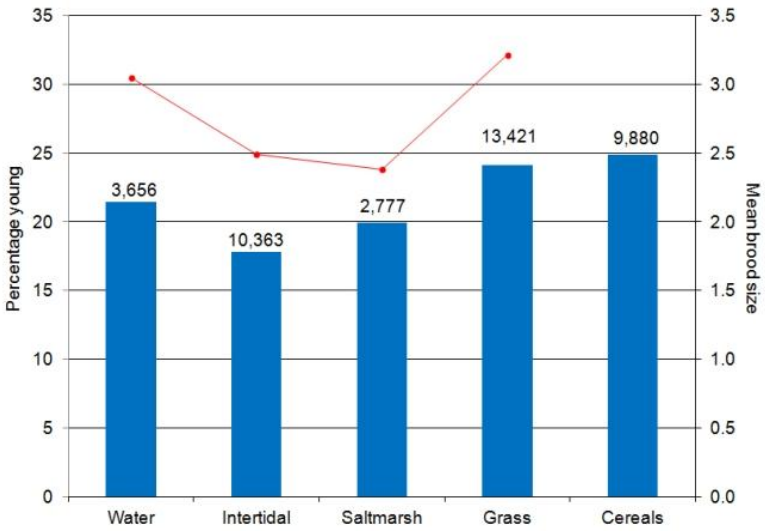

Figure 6. *The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK recorded in different habitat groups during winter 2014/15. Sample sizes are given above the columns.*

3. Discussion

Results from age assessments made at wintering sites in the UK indicate that the breeding success of Dark-bellied Brent Geese in 2014 was above the previous ten-year average (10.0% ± 2.63 SE), and 7.6% higher than the previous year. Mean brood size was higher than in 2013/14 and also above the previous ten-year mean (2.22 ± 0.13 SE).

No data on the breeding success among birds wintering outside the UK are available at the current time, so it is uncertain how representative are the estimates from the UK. However, reports from monitoring stations in the breeding grounds in Arctic Russia indicate that rodent and predator abundance was relatively low in 2014, with Arctic Fox numbers dropping sharply (Soloviev & Tomkovich 2015). Together, these factors are likely to have positively influenced the success of the Dark-bellied Brent geese during 2014 so it is expected that the whole population experienced a successful breeding season.

4. Acknowledgements

As ever, thanks are extended 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.

Soloviev, M & P Tomkovich. (Eds.) 2015. Online database: http://www.arcticbirds.ru/ Accessed June 2015.

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Goose & Swan Monitoring