WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2009/10

Dark-bellied Brent Goose *Branta bernicla bernicla*

1. Abundance

The abundance of Dark-bellied Brent Geese during 2009/10 was monitored through the Wetland Bird Survey (WeBS).

2. Breeding success

For the twenty-fifth consecutive winter, experienced volunteer observers assessed the breeding performance of Dark-bellied Brent Geese in winter 2009/10 (for methods see Hall 2008). Geese were aged at a total of 133 localities within 18 estuaries or coastal areas on the English east and south coasts, from Lindisfarne, Northumberland, to the Exe Estuary, Devon. Data were collected between 9 October 2009 and13 March 2010.

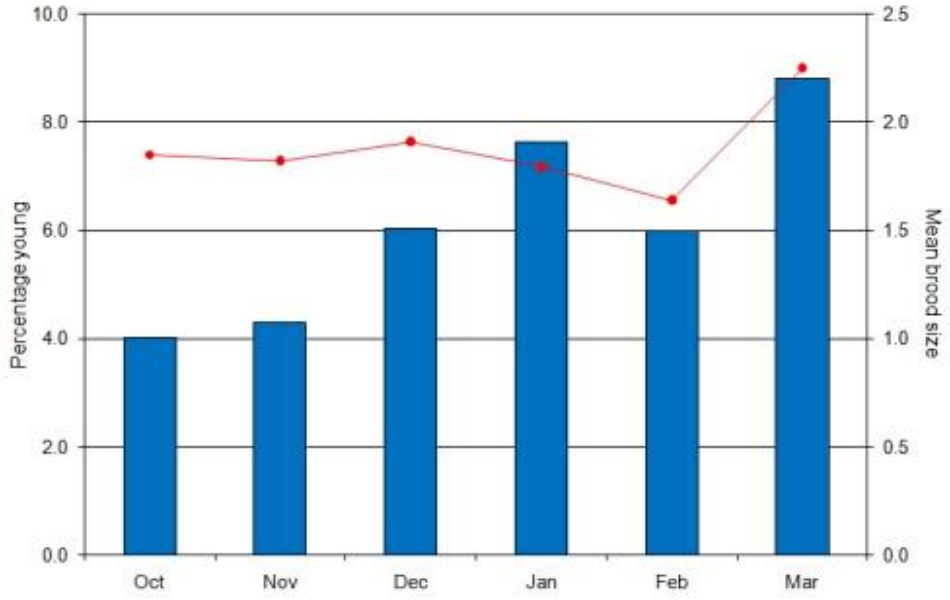
Of the 279 flocks assessed, 25.8% were aged in October, the majority (29.4%) were observed in November decreasing through the winter to 10.7% in February. Only eight flocks (2.9%) were aged in March. A total of 90,084 geese was aged; a decrease of 1.8% on the sample in 2008/09 although 10% higher than the previous five-year mean. The largest numbers were aged at Blackwater Estuary (25,066), Langstone Harbour (13,716) and Thames Estuary (10,954). Between 5,800 and 9,800 individuals were aged at Chichester Harbour, The Solent, Crouch Estuary and the North Norfolk Coast. Sample sizes at all other sites were smaller than 4,000 birds, with fewer than 500 individuals aged at six sites. The overall proportion of young birds was 5.3% and, of the 742 broods recorded, the mean brood size was 1.83 (± 0.04 SE) young per successful pair.

Sites in the UK at which Dark-bellied Brent Geese were aged during winter 2009/10. See table below for key to sites.

Numbers of Dark-bellied Brent Geese aged at British estuaries and coastal areas in winter 2009/10.

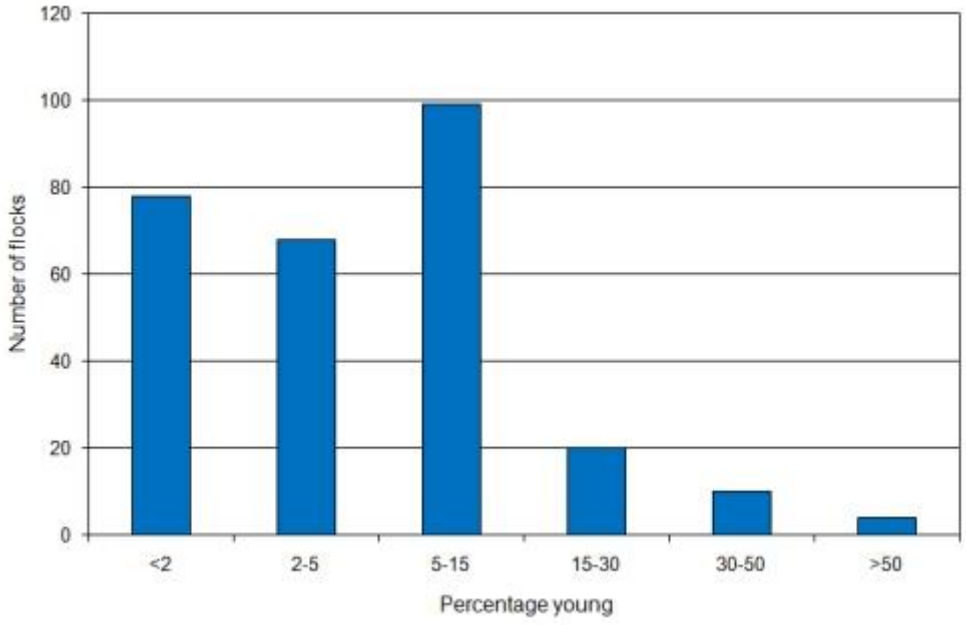
	Sample flocks							
Estuary	First	Last	n	No. sites	Total aged	% young	Mean brood size	SE
1 Exe Estuary	04 Nov	04 Mar	13	6	2,359	5.6	2.75	0.48
2 Poole Harbour	18 Dec	18 Dec	1	1	100	10.0	-	-
3 The Solent	9 Oct	27 Feb	38	5	7,180	5.1	1.68	0.19
4 Beaulieu Esutary	18 Oct	18 Oct	1	1	213	0.5	1.00	0.00
5 Langstone Harbour	15 Oct	09 Mar	53	25	13,716	5.4	1.81	0.09
6 Chichester Harbour	14 Oct	20 Dec	35	20	9,756	3.0	1.72	0.08
7 Medway/Swale Estuaries	19 Oct	10 Dec	14	10	833	12.0	1.00	0.00
8 Thames Estuary	09 Oct	20 Jan	8	2	10,954	5.0	1.82	0.10
9 Crouch Estuary	16 Oct	05 Feb	9	5	6,257	10.7	2.17	0.24
10 Blackwater Estuary	27 Oct	13 Mar	40	15	25,066	4.0	2.38	0.26
11 Colne Estuary	11 Nov	11 Nov	3	3	100	9.0	3.00	0.00
12 Hamford Water	14 Oct	12 Nov	5	4	480	4.4	2.50	0.56
13 Stour Estuary	18 Oct	22 Jan	19	10	1,804	5.5	1.96	0.27
14 North Norfolk Coast	25 Oct	12 Mar	20	13	5,893	8.4	2.09	0.19
15 The Wash	24 Oct	20 Feb	8	3	3,108	7.2	1.98	0.13
16 North Lincolnshire Coast	22 Oct	17 Jan	9	7	2,152	4.0	1.37	0.13
17 Humber Estuary	01 Dec	01 Dec	1	1	38	5.3	1.00	0.00
18 Lindisfarne	22 Nov	22 Nov	2	2	75	5.3	2.00	0.00
Total	**09 Oct**	**13 Mar**	**279**	**133**	**90,084**	**5.3**	**1.83**	**0.04**

The average proportion of young present in flocks increased from a low of 4.0% in October to 7.6% in January. It then dipped slightly in February (6.0%) before rising to a peak of 8.8% in March, although the sample of aged birds was considerably lower than in previous months. The mean brood size of successful pairs fluctuated slightly throughout the winter, peaking at 2.25 (± 0.75 SE) in March; again the sample size was considerably smaller than in the earlier months.



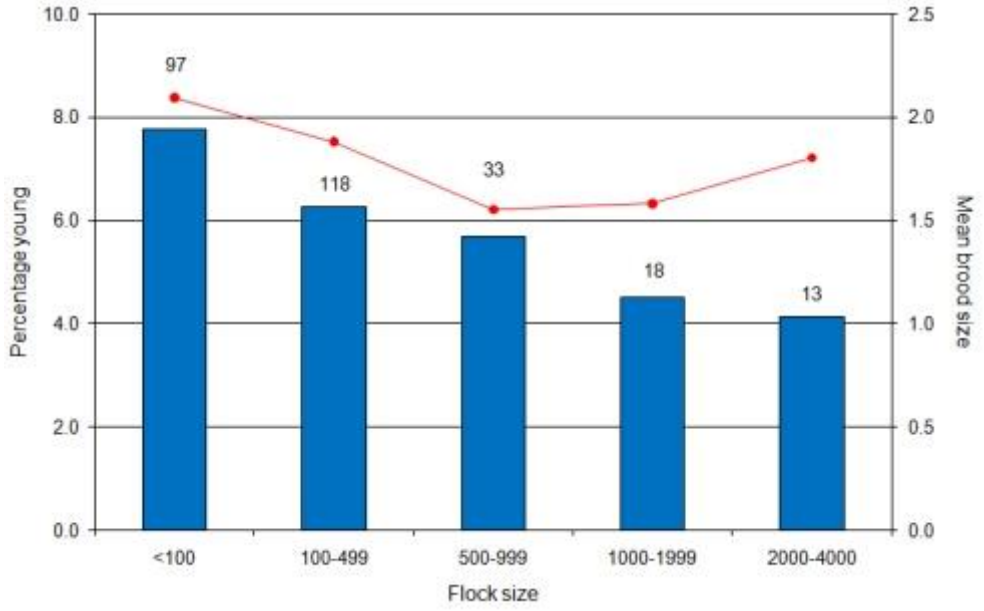
The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK during winter 2009/10.

The proportion of young within individual flocks varied from 0% to 78%. Over 52% (n = 146) of the flocks aged contained less than 5% young; of which 78 flocks held less than 2% young and 42 contained no young at all. Ninety-nine flocks (35.5%) contained 5-15% young, and as the proportion of young increased above 15%, the number of flocks within each class decreased considerably; 20 flocks (7.2%) held15-30% young, and 10 (3.6%) and four (1.4%) contained 30-50% and greater than 50% young, respectively.



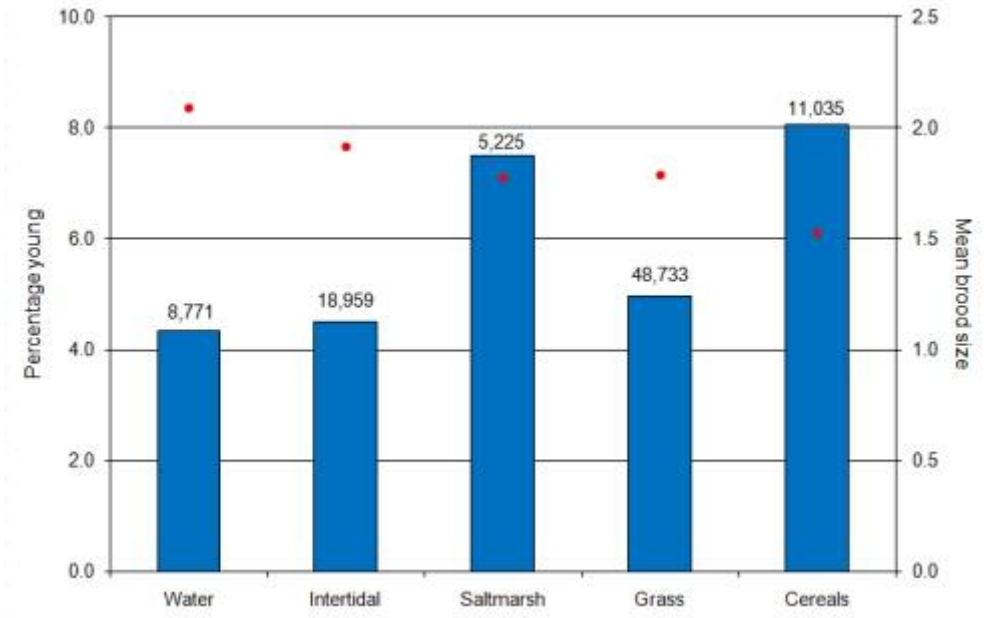
Frequency distribution of the percentage of young in individual flocks (n=314) of Dark-bellied Brent Geese in the UK during winter 2009/10.

The proportion of young decreased across flocks size, with the highest (7.8%) observed in flocks of fewer than 100 geese, and the lowest (4.1%) observed in flocks of 2,000-4,000 birds. Mean brood size varied between 2.09 (± 0.14 SE) and 1.55 (± 0.13 SE) young per successful pair, the largest recorded in flocks of less than 100 geese.



The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK in flocks of different size during winter 2009/10 (sample sizes are given above columns).

Geese were recorded at five main habitat types; water, intertidal (including *Enteromorpha* spp., *Ulva* spp., and *Zostera* beds), saltmarsh, grass/pasture and cereal fields, including stubble and oilseed rape. The majority of geese (51.1%) were aged in grass fields, while 21.1% were observed on intertidal habitats, 12.3% in cereal fields and 9.7% on water. Only 5.8% of the total geese aged were recorded on saltmarsh.



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 2009/10. 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 the most recent ten-year mean (10.2% ± 2.9 SE), though 4.2% higher than the previous year. The mean brood size was also marginally higher compared with 2008/09 and only slightly lower than average (2.12 ± 0.13 SE).

In 2009, reports from monitoring stations along the breeding grounds in arctic Russia indicate that lemmings were rare whilst Arctic Foxes were present in variable numbers; common on the Taimyr and Gydan Peninsulas but rare at the Yamal Peninsula (Soloviev & Tomkovich 2010). As breeding success of Dark-Bellied Brent Geese is greatly influenced by interactions between lemming abundance and predator pressure, it is possible that the low numbers of rodents may have contributed to the below average breeding success in 2009.

4. References

Soloviev, M & P Tomkovich. (Eds.) 2010. *ARCTIC BIRDS: an international breeding conditions survey*. Online database: http://www.arcticbirds.ru/ Accessed 18 May 2010.

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. 2010. *Goose & Swan Monitoring Programme: survey results 2009/10 Dark-bellied Brent Goose Branta bernicla bernicla*. WWT/JNCC/SNH, Slimbridge.

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Goose & Swan Monitoring