

WWT/JNCC/SNH Goose & Swan Monitoring Programme

survey results 2011/12

Dark-bellied Brent Goose *Branta bernicla bernicla*

1. Abundance

The abundance of Dark-bellied Brent Geese during 2011/12 was monitored through the Wetland Bird Survey (WeBS); the results are expected to become available in 2013.

The latest WeBS results, for 2010/11, have been published in Holt *et al.* 2012.

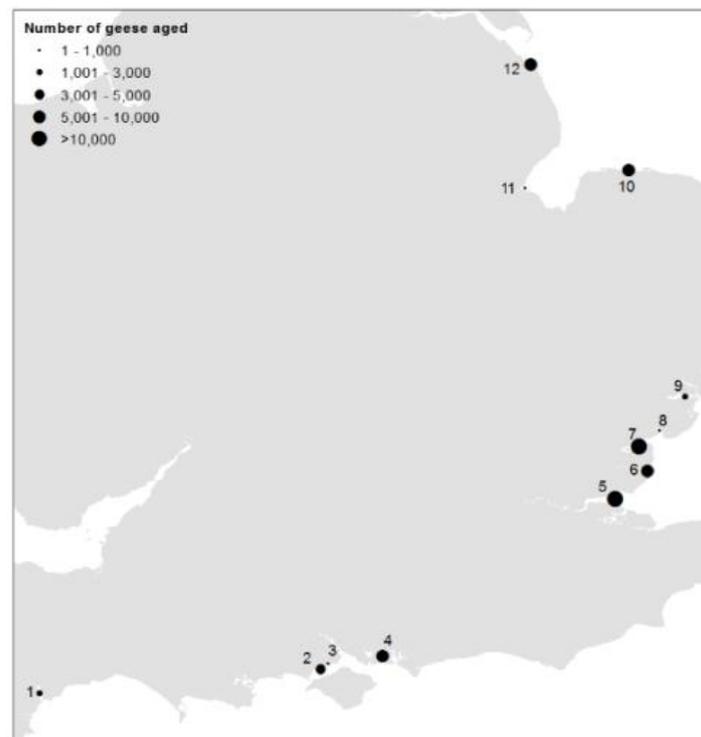
In 2010/11, the British maximum recorded by WeBS was 71,550 in February (Holt et al. 2012). This represents a 12% decrease on the previous winter.

2. Breeding success

For the twenty-seventh consecutive winter, experienced volunteer observers assessed the breeding performance of Dark-bellied Brent Geese in winter 2011/12 (for methods see Hall 2008). Geese were aged at a total of 98 localities within 12 estuaries or coastal areas on the English east and south coasts, from the North Lincolnshire Coast, to the Exe Estuary in Devon. Data were collected between 30 September 2011 and 8 April 2012.

Of the 154 flocks assessed, the majority 18.9% and 18% were aged in December and March. 16.4% were observed in January, and 16.4%, 16.3% and 15.9% of the flocks were assessed in February, November and October, respectively. Only a few flocks were monitored in September (7.9%).

A total of 80,396 geese were aged; an increase of 67% on the number aged in 2010/11 and 0.4% lower than the previous five-year mean. The largest numbers were aged at the Thames Estuary (24,809) and Blackwater (18,481). Between 4,000 and 7,000 individuals were aged at the North Norfolk Coast, The Solent, The Crouch and Langstone Harbour. Sample sizes at all other sites were smaller than 3,000 birds, with fewer than 500 geese aged at three sites. The overall proportion of young birds was 16.2% and of the 578 broods recorded, the mean brood size was 2.26 (\pm 0.05 SE) young per successful pair.



Sites in the UK at which Dark-bellied Brent Geese were aged during winter 2011/12. See table below for key to sites.

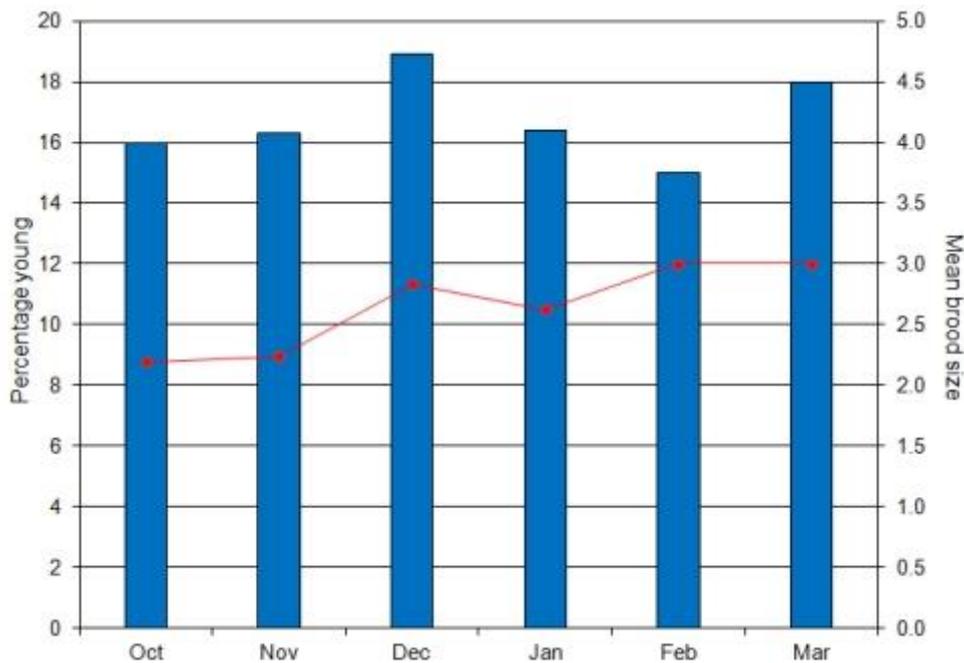
Numbers of Dark-bellied Brent Geese aged at British estuaries and coastal areas in winter 2011/12.

Estuary	Sample flocks			No. sites	Total aged	% young	Mean brood size	SE
	First	Last	n					
1 Exe Estuary	23 Oct	18 Dec	6	5	1,225	21.4	-	-
2 The Solent	15 Oct	21 Jan	23	10	4,377	15.4	2.00	0.10
3 Beaulieu Estuary	18 Mar	18 Mar	1	1	356	14.9	-	-
4 Langstone Harbour	07 Oct	21 Dec	32	20	9,851	13.8	2.30	0.07
5 Thames Estuary	30 Sep	24 Oct	14	2	24,809	15.9	-	-
6 Crouch Estuary	26 Oct	04 Mar	5	5	5,140	18.9	-	-
7 Blackwater Estuary	29 Oct	15 Mar	22	17	18,481	18.7	-	-
8 Colne Estuary	30 Nov	30 Nov	1	1	78	6.4	1.30	0.33
9 Stour Estuary	18 Nov	08 Apr	9	9	2,135	14.3	2.30	0.26
10 North Norfolk Coast	27 Oct	16 Mar	22	10	6,053	17.3	2.40	0.12
11 The Wash	08 Nov	08 Nov	1	1	163	34.4	2.84	0.24
12 North Lincolnshire Coast	13 Oct	23 Mar	18	17	7,728	11.9	1.80	0.14
Total	30 Sep	08 Apr	154	98	80,396	16.2	2.26	0.05

The percentage of young present in flocks decreased slightly through the winter from a peak of 18.9% in December to 15.0% in February, before rising again in March (18.0%); note, sample sizes in the latter part of the winter were lower than in the earlier months. The mean brood size of successful pairs fluctuated slightly throughout the winter, peaking at 3% (± 0.44 SE) in February.

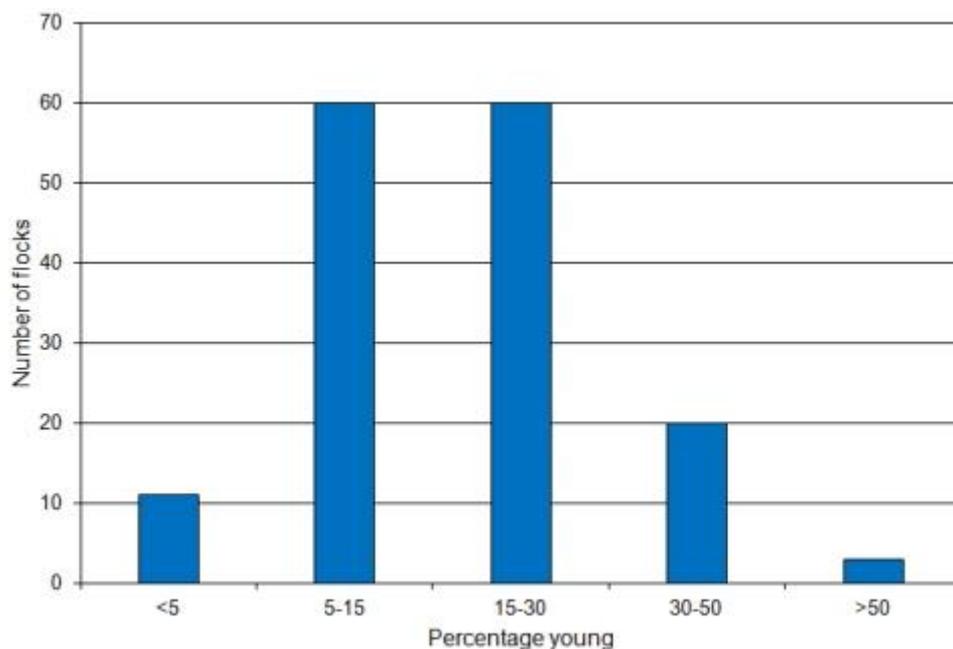
The proportion of young and mean brood size of Dark-bellied Brent Geese in the UK during winter 2011/12

Month	Proportion of young		Mean brood size		
	overall (%)	n	Mean	SE	n
Sep	7.9	1,000	-	-	-
Oct	15.9	31,641	2.19	0.09	187
Nov	16.3	21,288	2.24	0.06	356
Dec	18.9	5,737	2.83	0.28	18
Jan	16.4	6,061	2.63	0.32	8
Feb	15.0	7,933	3.00	0.45	5
Mar	18.0	6,248	3.00	0.71	4
Apr	14.0	488	-	-	-
Total	16.2	80,396	2.26	0.05	578



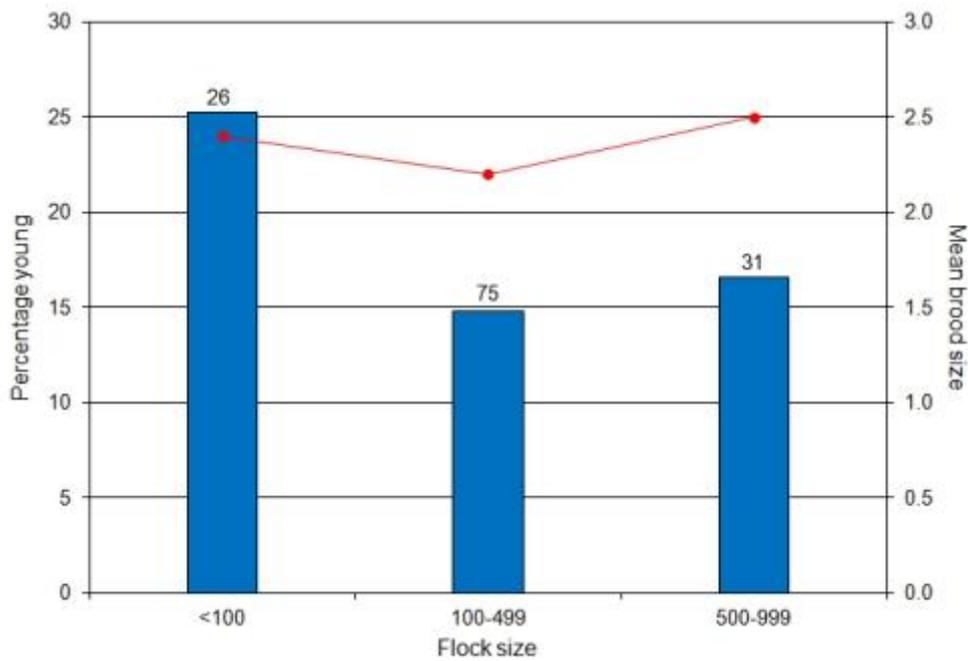
The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in the UK during winter 2011/12.

The proportion of young within individual flocks varied from 0% to 65%. 39.9% (n = 60) contained 5-15% and 15-30% of young. 7.1% (n = 11) held less than 5% young; The number of flocks in the top two classes held; twenty flocks (13.0%) of 30-50% young and three (1.9%) held greater than 50%.



Frequency distribution of the percentage of young in individual flocks (n=166) of Dark-bellied Brent Geese in the UK during winter 2011/12.

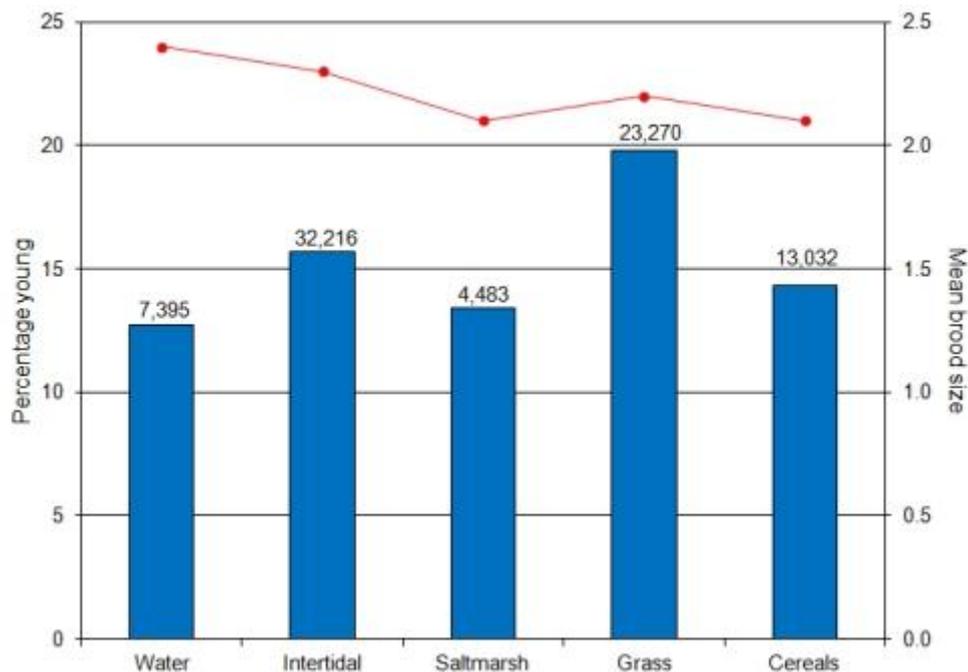
The proportion of young was highest (25.3%) amongst flocks of fewer than 100 geese, whilst the number of juvenile birds seen in flocks of the other size classes were 14.8% for flocks of 100-499 geese and 16.6% for flocks of 500-900 birds. Mean brood size varied between 2.2 (± 0.11 SE) and 2.5 (± 0.15 SE) young per successful pair. No brood sizes were recorded in flocks of 1,000-1,999 birds.



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 2011/12 (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 (40%) were aged in intertidal habitats, whilst 28.9% were observed on grass habitats. Lower numbers were seen on cereals (16.2%), water (9.1%) and saltmarsh (5.6%).

The highest proportion of young was seen amongst flocks in grass habitats (19.8% young) and intertidal habitats (15.7%). The lowest was amongst flocks recorded on water (12.7%). Mean brood size varied between 2.12 (± 0.21 SE) and 2.41 (± 0.11 SE) young per successful pair.



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 2011/12. 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 above the recent average ($9.5\% \pm 2.44$ SE); 2001/02-2010/11) and 3.5% higher than the previous year. Mean brood size was also higher than in 2010/11 and slightly above the previous ten-year mean (2.15 ± 0.13 SE).

Data from the Continent suggest that breeding success amongst birds seen there was higher than in the UK, with 21.4% young recorded amongst flocks in France and 23.6% in the Netherlands (Bart Ebbing pers. comm).

Reports from monitoring stations along the breeding grounds in arctic Russia indicate that rodent and predator numbers were generally low in 2011 (www.arcticbirds.ru) As breeding success of Dark-Bellied Brent Geese is greatly influenced by interactions between rodent abundance and predator pressure, it is possible that the low number of predators allowed the geese to breed relatively successfully.

4. References

Holt CA, GE Austin, NA Calbrade, HJ Mellan, RD Hearn, DA Stroud, SR Wotton & AJ Musgrove. 2012. *Waterbirds in the UK 2010/11: The Wetland Bird Survey*. BTO/RSPB/JNCC, Thetford.

This report should be cited as:

WWT. 2012. *Goose & Swan Monitoring Programme: survey results 2011/12 Dark-bellied Brent Goose Branta bernicla bernicla*. WWT/JNCC/SNH, Slimbridge.

© The Wildfowl & Wetlands Trust

All rights reserved. No part of this document may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the copyright holder.

This report was produced under the Goose & Swan Monitoring Programme (GSMP). This programme monitors numbers and breeding success of geese and swans in the UK during the non-breeding season. GSMP is organised by the Wildfowl & Wetlands Trust in partnership with the Joint Nature Conservation Committee (on behalf of Natural Resources Wales, Natural England and the Council for Nature Conservation and the Countryside) and Scottish Natural Heritage.



Goose & Swan Monitoring