

NUMBERS OF DARK-BELLIED BRENT GEESE IN BRITAIN, MIDWINTER 1989/1990

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SUMMARY

Counts of Dark-bellied Brent Geese were undertaken in midwinter 1989/90, with extra effort taking place in January and February to ensure that most flocks were located. British totals from all midwinter months in 1989/90 were low compared to those from the previous two winters, with an estimated 90,000 in January representing the peak count. The Wash was again outstanding in its importance for this species. Suggestions for the future of this census are made.

INTRODUCTION

The coastline of Britain supports a large wintering population of Dark-bellied Brent Geese Branta b. bernicla and their numbers have been monitored on a site by site basis through the National Wildfowl Counts programme since the late 1940s. To supplement these counts, extra effort has been expended during the last four winters to ensure that as many of the geese are located during the counts as is practicable. This has become increasingly necessary as the British population has expanded dramatically in line with a 10-fold increase in the world population (e.g. Salmon & Fox, In press, Summers & Underhill, In press). This expansion seems likely to continue, at least for the time being, as there is no evidence as yet to suggest that population growth in this species is limited by density-dependent factors (Summers & Underhill, In press). With the increase in numbers has come a change of habit. Traditionally, Dark-bellied Brent Geese obtained their winter food solely from the intertidal zone. However, in the early 1970s, large numbers started to feed in grass pastures and field crops (e.g. Ogilvie & St Joseph 1976, St Joseph 1979), sometimes at considerable distances from the coast, thus presenting further difficulties with regards to censusing them, and bringing the geese themselves into conflict with farmers.

Here, we report the results from midwinter 1989/90 and draw comparisons with data from the previous two winters. The data are provided by the regular network of volunteers who undertake counts at coastal sites for the National Wildfowl Counts and the Birds of Estuaries Enquiry, on behalf of The Wildfowl & Wetlands Trust (WWT) and the British Trust for Ornithology (BTO), respectively.

METHODS

The sites included in this report are the principal sites for Dark-bellied Brent Geese in Britain. This has been determined by extracting from the National Wildfowl Counts database all sites that have held more than 10 Dark-bellied Brent Geese in midwinter (December to February) on more than two occasions during the last ten counting seasons (1980/81 to 1989/90). There are 41 sites in Britain that satisfy such selection criteria. Most are

estuaries, as listed by Salmon *et al.* (1989), and their boundaries are given by Kirby (*In press.*). Two non-estuarine sites are included: Thanet in north-east Kent lies between Pegwell Bay and the Swale and its ornithological significance is discussed by Henderson (1988); Foreland is a rocky promontory on the eastern shore of the Isle of Wight. There have been no counts of Thanet during the last three winters, though National Wildfowl Count data from earlier years, particularly from Minnis Bay, Reculver and Swalecliffe, indicate that this may represent an important omission.

Most counts at coastal sites take place during the rising and high tide periods (Kirby, *In press.*) and all areas within the site are searched. At the larger sites, several counters are involved, each visiting defined sectors of the site. In most cases, the sectors of a site are visited at approximately the same time during the count day, thus minimizing the chances of double recording. Data from the larger sites are collated by the site organizer(s) who checks for any obvious duplication of flocks before the data are submitted to the WWT/BTO. During months when extra effort is expended to locate all goose flocks ('special censuses'), at the request of the WWT, additional information is collated including habitat details for the site, the locations of feeding geese and notes on their behaviour.

The dates of National Wildfowl Counts at coastal sites during December to February 1987/88 - 1989/90 were as follows, and 'special censuses' were undertaken on the January and February dates in each winter:

	December	January	February
1987/88	20	17	21
1988/89	11	15	12
1989/90	17	14	11

In all three winters, the vast majority of sites were counted on the suggested date or on an alternative date close to it. In general, visibility and weather conditions were good during these counts, though December 1987 was very cold and the counts made in January 1988 and February 1990 were hampered, in some areas, by fog and strong winds respectively.

RESULTS

Table 1 shows the numbers of Dark-bellied Brent Geese recorded at each site in December to February 1987/88 - 1989/90, and gives total numbers for Britain in each month. These data may differ slightly from those published previously in Salmon (1988, 1989a) and Salmon *et al.* (1989) for two reasons. Firstly, we have not attempted to interpolate any of the missing counts as has been done in some earlier reports; and secondly, data received after the completion of earlier reports has been incorporated to allow as complete a picture as is possible at this time.

The grand totals from all midwinter months of 1989/90 were very low compared to those from the previous two winters, even in January and February, the months of special censuses (Table 1). Even allowing for the fact that data were not available or incomplete from a few sites, the 1989/90 peak total in January would be unlikely to exceed 90,000 birds, approximately 6,000 less than in January 1988 and *ca.* 12,000 less than that of January 1989. In two of the three winters, the special censuses of January and February have revealed much higher grand totals than the December National Wildfowl Counts. However, this was not the case in 1988/89, when the peak of over 104,000 birds occurred in December (Table 1).

The number of Dark-bellied Brent Geese recorded at most sites was extremely variable between years, in all of the midwinter months (Table 1). At most sites, lower numbers were recorded in 1989/90 than in 1988/89, though there have been sustained increases over the three winters in one or more months on the Exe, NW Solent, Portsmouth, Langstone and Pagham Harbours, the Deben and Humber. Interestingly, the most noticeable declines have taken place on the Orwell and on the Ore complex in Suffolk (Table 1), and it is possible that this could account for the increased numbers recorded on the nearby Deben. At most sites, peak numbers in each winter were most frequently recorded in January. Peaks in December were as frequent as February peak counts.

There are currently 17 British sites that regularly hold numbers in excess of the level required for international importance (1,700; see Salmon *et al.* 1989) (Table 2). Of these, the Wash is outstanding in its importance for Dark-bellied Brent Geese. Five additional sites, including the tiny Newtown estuary on the Isle of Wight, hold numbers which would make them of national importance for this sub-species.

DISCUSSION

In autumn 1989, 17-39,000 Dark-bellied Brent Geese were aged at various localities throughout Britain and only 22 juveniles were recorded (Salmon 1989b). In addition to these records, a flock of 14 juveniles was observed on the sea off Culver Cliff (Isle of Wight) in early October (J.M. Cheverton, *In litt.*), and there was only a single record from midwinter, comprising a single juvenile on the Wash in early January (A. Ball, *In litt.*), thus confirming the lack of juveniles. Based on the autumn age counts, Salmon (1989b) predicted that the British population would be between 80,000 and 120,000 birds in 1989/90. The total, peaking at probably around 90,000 in January (allowing for missing data and incomplete counts), falls within the lower end of this range.

As in previous winters, most feeding flocks in January and February 1990 (months of special censuses) were recorded on intertidal flats and saltmarshes. However, there was extensive use of grasslands at various sites along the south coast of England and some feeding on cereals at sites in the east. Most observers, however, commented that the use of cereals was very infrequent in 1989/90 compared to some earlier winters.

The high degree of variability in numbers recorded at particular sites is typical of a species that is highly mobile in winter and may move frequently outwith the counting area adopted at each site on the day of the count. An accurate census countrywide is thus difficult to achieve and may be made more difficult by the tendency for Dark-bellied Brent Geese to feed inland. This was certainly the case in N Norfolk in 1989/90 where many inland-feeding geese were missed by the census (D. Henshilwood, *pers. comm.*). With the current network of counters at coastal sites fully stretched to achieve complete coverage of the already established sites, the counting of geese feeding in inland areas must be undertaken by additional counters, be it volunteers or professional groups, at the time when counts at coastal sites are taking place. A necessary prerequisite to this would be the identification and definition of 'tracts' of land worthy of searching for geese. Much of the information to be able to do this already exists and was collated by several organizations interested in the possible provision of alternative feeding areas (AFAs) for geese within the EC set-aside scheme (Wadsworth 1989).

If necessary, further detail could be extracted from county records and bird reports, or by consultation with local experts. This will be explored as an alternative to the present system; the need to identify potential AFAs makes the monitoring of inland geese extremely important for the conservation of the population.

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Table 1. Numbers of Dark-bellied Brent Geese counted at coastal sites in Britain in December to February 1987/88 - 1989/90. Sites are presented in geographical order starting in North Devon and working anti-clockwise around the coast. A cross indicates that there was no count available in that month. Counts considered to be very incomplete are given in brackets.

	DECEMBER			JANUARY			FEBRUARY		
	1987	1988	1989	1988	1989	1990	1988	1989	1990
Taw/Torridge	143	191	145	10	280	160	0	190	86
Kingsbridge	10	23	27	12	27	24	12	17	20
Exe	1724	1811	1924	753	1166	867	1092	1147	944
Otter	0	4	6	1	15	0	0	3	9
The Fleet/Wey	1000	x	x	(0)	685	850	412	17	105
Poole Hbr	412	174	(8)	326	533	x	741	636	(291)
Christchurch Hbr	67	167	114	71	188	137	102	209	172
NW Solent	1060	1350	1646	1750	1680	2127	1400	2400	1645
Beaulieu	260	940	450	490	1140	680	520	980	920
Southampton	856	1381	(349)	1547	2486	(2150)	562	1449	(2183)
Yar	100	194	110	150	305	134	90	190	105
Newtown	500	1132	791	990	1238	1117	500	1289	940
Medina	33	43	46	29	57	51	29	57	31
Brading Hbr	33	111	0	151	68	189	26	20	200
Foreland	67	104	x	27	86	x	97	84	x
Portsmouth Hbr	2129	1696	2240	1571	1748	2567	1387	1741	2063
Langstone Hbr	6010	7022	5145	6800	7113	7821	5450	5040	5046
Chichester Hbr	8244	9379	6961	8276	10473	9484	9721	9660	4664
Pagham Hbr	2051	477	2232	1251	2476	2755	2551	2965	476
Rye/Pett	19	6	1	5	17	6	5	0	0
Pegwell Bay	0	137	0	2	49	x	0	80	x
Thanet ++	x	x	x	x	x	x	x	x	x
Swale	(58)	3032	x	2586	(1578)	2339	(768)	(1184)	692
Medway	2805	2424	2158	2189	(1921)	2610	2896	(3093)	2805
Thames	6856	10050	5316	10894	5728	5529	6120	7302	4920
Crouch	2853	3128	2678	2541	3755	2870	1727	5333	3109
Dengie	300	1614	(790)	(850)	2455	1540	2598	1500	1900
Blackwater	7709	8363	4954	6038	6605	5726	6320	6172	6370
Colne	2592	5062	3966	4765	5494	2993	5487	5348	2745
Hamford Water	2620	3319	x	3000	3942	x	3750	1265	x
Stour	1156	1784	1387	970	1351	961	1375	946	1252
Orwell	2000	554	61	965	224	20	898	610	117
Deben	383	800	2000	484	797	900	298	1002	1500
Ore complex	115	201	56	50	457	2	7	103	7
Breydon Water	3	0	7	0	0	5	0	10	5
N Norfolk	8343	9015	(5973)	12711	11918	6187	11033	10300	8350
Wash	16718	27407	14379	21769	23376	18934	23236	21107	18049
Humber	1263	479	1660	1121	236	1579	442	478	1229
Tees	0	0	0	5	0	1	0	0	1
Lindisfarne	0	0	x	17	0	40	x	0	12
Burry Inlet	777	675	925	635	885	394	510	785	661
TOTALS	81269	104249	(68505)	95802	102552	(83749)	92162	94712	(73624)

++ Note that although this site has not been counted during the last three winters, earlier data suggest that it may hold good numbers of geese.

Table 2. Principal sites for Dark-bellied Brent Geese in Britain. The sites are ranked according to average midwinter maxima, 1987/88 - 1989/90. The table is broken into three parts: sites on the left hold internationally important numbers of this sub-species; those at the top of the right hand column hold nationally important numbers; and those at the bottom of the right hand column are the best of the remaining sites for this sub-species. For information concerning national and international importance see Salmon et al. (1989).

Wash	23,192	Stour	1,515
N Norfolk	10,993	Deben	1,162
Chichester Hbr	9,893	Humber	1,134
Thames	8,824	Newtown	1,132
Blackwater	7,418	Orwell	909
Langstone Hbr	7,245		
Colne	4,982	Burry Inlet	862
Hamford Water	3,846	Beaulieu	860
Crouch	3,765	The Fleet/Wey	845
Medway	2,931	Poole Harbour	689
Pagham Hbr	2,757	Ore complex	209
Swale	2,652	Yar	196
Dengie	2,318	Taw/Torridge	194
Portsmouth Hbr	2,148	Christchurch Harbour	161
NW Solent	2,092	Brading Harbour	154
Southampton	2,072		
Exe	1,820		

Note that in calculating average maxima for each site, incomplete counts were only used if they exceeded an initial average based on complete counts only, thus making maximum use of the available data.

1 July 1990