AN ASSESSMENT OF BREEDING SUCCESS IN THE DARK-BELLIED BRENT GOOSE *Branta b. bernicla* IN 1992

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SUMMARY

Some 93.000 Dark-bellied Brent Geese were counted and 61,000 were aged at 17 estuarine sites in Britain in 1992. Age counts showed that there had been an almost complete breeding failure in 1992. The British wintering population is predicted to be between 104,000 and 156,000 in 1992-93.

INTRODUCTION AND METHODS

The breeding performance of the Dark-bellied Brent Goose *Branta b. bernicla* was assessed for the eighth consecutive year in 1992. Experienced volunteers recorded the proportion of young and brood sizes at key sites for the sub-species in Great Britain during, the autumn, generally from September to November. The counts are organised by WWT under contract to the Joint Nature Conservation Committee and are used to forecast the numbers geese in the country during the winter.

RESULTS

Counts were received from 17 estuaries, one less than in 1991, largely from the east and south coasts of England, and were made between the 13 September and 15 December. A total of 215 counts was made, with a different date or different count unit (many of the large estuaries comprise several count units) constituting a count. More than 20 counts were made at four estuaries: the Wash (38), Chichester Harbour (35), Langstone Harbour (29) and the Humber Estuary (22). Only two sites were counted once: the Deben and Swansea Bay.

A total of 92,676 birds were counted, around 11,000 less than in 1991. The largest numbers of birds counted were on the Thames Estuary (22,499), the Wash (20,699) and Chichester Harbour (10,167). Counts at all other sites were of less than 7,000 birds. However, no emphasis was placed on obtaining a coordinated census that avoided double counting. Thus, counts conducted at the same estuaries on different dates will have undoubtedly recorded some birds more than once in these totals.

The distribution of birds across habitats showed a marked preference for intertidal areas, with most birds on water (38.1 %) or marsh (38.5%). Smaller proportions were found on mud (12.2%) and grass (9.2) and only 2.0% were found on cereal. There was considerable variation in the proportion of birds on each habitat between sites. However, no attempt was made to control the frequency of counts in different habitats. These figures must also be viewed with caution due to the possibility of double counting as highlighted for total counts. However, it is likely that these counts badly reflect the preference of the birds.

A total of 61,834 birds was aged. However, only 32 young birds were identified, nearly all of which were found in Chichester Harbour. If double counting is taken into consideration, it is likely that there were no more than 16 young birds involved. This represents less than 0.1 % young. One brood of three and six broods of two were discerned, with the remaining birds being singles.

DISCUSSION

The results of autumn age counts show Dark-bellied Brent Geese to have had an almost total breeding failure in 1992. A similar failure was observed in 1989 (Salmon 1989) and follows the pattern of cyclic breeding success in this subspecies, with one good year, one poor year and one year of variable success. Using an annual mortality rate of 14.3% (Summers & Underhill 1991) and a world population of 304.000 in 1991-92 (A St Joseph pers. comm.). the world population is predicted to have fallen to around 260,000 in the winter of 1992-93. Since between 40% and 60% visit Britain (Salmon & Fox 1991), the mid-winter population in Britain is predicted to be 104.00 to 156.000 birds.

Ebbinge (1992) showed that birds favoured saltmarsh over grassland at spring staging sites in Holland. It is thus interesting to note that the proportion of birds utilising different habitats in 1992 was very similar to 1991 with the exception of larger proportion on marsh (38.5% in 1992 cf. 29.1 % in 1991) and a smaller proportion on grass (9.2% cf 23.4%). However, much finer analyses would be needed to confirm that the competitive exclusion observed in Holland also operates in Britain during the autumn.

Table 1. Numbers of Dark-bellied Brent Geese counted and aged at a numbcr of British estuaries in autumn 1992. Distribution across habitats is also shown.

ESTUARY	FIRST COUNT	LAST COUNT	NO. COUNTS	NO. UNITS	TOTAL COUNT	'MAX FLOCK	'TOTAL AGED	NO. YOUNG	DISTRIBUTION ACROSS DIFFERENT HABITATS WATER	MUD	MARSH	GRASS	CEREAL	ESTUARY
Beaulieu Est.	25.09	29.11	7	1	2,056	536	1,499	0	0.0	100.0	0.0	0.0	0.0	Beaulieu
Blackwater Est.	6.10	11.11	5	3	4,249	2,450	2,589	0	36.2	0.0	0.0	57.7	6.2	Blackwater
Burry Inlet	30.09	13.11	3	1	1,086	554	0	0	0.0	0.0	100.0	0.0	0.0	Burry
Chichester Hbr	29.09	27.11	35	17	10,167	1,500	9,382	28	62.6	0.9	28.1	8.4	0.0	Chichester
Deben	15.12	15.12	1	1	760	760	760	0	0.0	0.0	0.0	0.0	100.0	Deben
Exe Est.	22.09	20.10	2	1	1,064	1,000	576	a	100.0	0.0	0.0	0.0	0.0	Exe
Hamford Water	15.09	30.11	10	4	5,920	2,116	1,838	1	0.0	60.6	0.0	39.4	0.0	Hamford
Humber Est.	20.09	28.11	22	4	6,075	800	5.575	0,	2.1	3.3	81.6	0.0	13.0	Humber
Langstonc Hbr	6.10	28.11	29	8	5,925	1,150	5.834	0	17.8	5.0	44.9	32.3	0.0	Langstonc
North Norfolk	22.09	27.11	18	7	6,471	2,500	10,491	2	3.5	11.8	54.9	29.8	0.0	N Norfolk
North West Solent	3.10	7.10	5	4	729	300	629	0	0.0	100.0	0.0	0.0	0.0	NW Solent
Orwell	11.10	18.11	3	2	222	132	222	0	83.3	16.7	0.0	0.0	0.0	Orwell
Poole Hbr	17.10	22.11	9	2	1,172	295	892	a	84.6	0.0	15.4	0.0	0.0	Poole
Stour Est.	6.10	20.11	16	6	3,578	955	1,216	0	0.0	100.0	0.0	0.0	0.0	Stour
Swansea Bay	13.09	13.09	1	1	4	4	4	1	100.0	0.0	0.0	0.0	0.0	Swansea
Thames Est.	2.10	12.11	11	3	22,499	5,000	7,357	0	100.0	0.0	0.0	0.0	0.0	Thames
Wash	24.09	29.11	38	11	20,699	3,000	12,520	0	0.0	7.8	92.2	0.0	0.0	Wash
TOT ALS	13.09	15.12	215	76	92,676	5,000	61,384	32	38.1	12.2	38.1	9.2	2.0	

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REFERENCES

Ebbinge. B.S. 1992. Regulation of nwnbers of Dark-bellied Brent Geese *Brant bernicla bernicla* on spring staging sites. *Ardea* 80: 203-228. Salmon, D.G. 1989. Dark-bellied Brent Goose age COWlts, 1989. Report to JNCC, WWT, 2pp.

Salmon, D.G. & Fox, A.D. 1991. Dark-bellied Brent Geese *Branta b. bernicla* in Britain, 1976-1987. *Ardea* 79: 327-330

Swnmers, R.W. & Underhill. L.G. 1991. The growth of the population of Dark-bellied Brent Geese *Branta b. bernicla* between 1955 and 1988.1. *Appl. Ecol.* 28: 574-585

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