

# BRENT GOOSE AGE-GROUP COUNTS

## 1959 - 60

P. J. K. Burton

ACCOUNTS of studies on age-group ratios in Dark-bellied Brent Geese *Branta bernicla bernicla* (L.) in Essex and elsewhere have appeared in the three previous Annual Reports (Burton 1958-1960). In 1958-59, the counts were extended by the collection of data from observers in other areas and this has been continued. Counts during 1959-60 came from Essex and North Norfolk, and also from Holland and France. In addition, some counts of Pale-bellied Brent *B. bernicla hrota* (O. F. Müller) have been received from Northumberland. The results for the various areas are given below.

### Essex

Counts were made at Foulness, the Ray Sands, Dengie, Goldhanger and Hamford Water. The total examined was 1664, of which 379 (23%) were first-winter birds. 29 samples of 50 were obtained from the following areas:-

Foulness	.....	15 samples
Dengie	.....	5 samples
Ray Sands	.....	2 samples
Goldhanger	.....	7 samples

The mean number of first-winter birds per sample was 11.69, with the high standard error of 1.31. Counts from different parts of the county varied quite widely, and at Foulness the proportion of first-winter birds noted in November, 1959 was unusually high in relation to the results obtained there and elsewhere during succeeding months.

### Other Areas

Counts from areas other than Essex totalled 621, of which 115 (19%) were first-winter birds. 11 samples of 50 were obtained, 8 from Norfolk and 3 from Holland.

### Norfolk

Counts were made on 4th and 5th January, 1960 at Sco't Head Island by the writer and R. Chestney, Warden of the Reserve. The 8 samples of 50 obtained included 67 first-winter birds (17%). All the birds observed were Dark-bellied.

### Holland

Information on the Brent in the Kattendijke area of the Ooster Schelde in South Holland were again received from T. Lebet. 3 samples were provided by a count made on 13th December, 1959 which totalled 158, including 25 first-winters (16%). A late count on 8th May, 1960, which gave only 6 young out of 124, has not been included in the totals, as it is very likely that at such a late date, many young had already moulted into their summer plumage, which is indistinguishable from the adult. However, the count is valuable, as it shows that at least some first-winter birds can still be identified in late spring. This was implied by Moffitt (1932) stating that the latest lingerers in May among Black Brant *B. bernicla nigricans* Lawrence in California are mainly immature, and also by Phillips (1932) who noted

that immatures were in less hurry to leave the Monomoy area of Massachusetts on spring migration. This evidence supports the belief that the observed absence of young in West Jutland in spring 1959 was further evidence of breeding failure in 1958 (Burton 1960). It is interesting to note that young Black Brent hatched at Slimbridge in 1959 had moulted out of first-winter plumage by the end of January. Age-group counts in Essex have shown no sign of such an early moult on any noticeable scale, and it seems there may be some physiological difference in this respect between collection birds and wild ones.

### France

Two small counts have been received. On 31st January, 1960, 8 young were found in a party of 34 at the Baie de l'Aiguillon (Vendée), where some 200 were present (F. Spitz). On 9th March, 1960, 15 first-winters out of 29 were counted at Anse du Pô, Golfe du Morbihan, by l'Abbé R. Bozec.

### Total Count

40 samples were obtained in all, giving a total of 429 first-winter birds. The mean number per sample was 10.72, with standard deviation 6.44 and standard error of the mean 1.02. The results of counts since 1954-55 are summarised in Table 1.

**Table 1:** Proportions of first-winter birds in sample counts of Dark-bellied Brent in England, 1954-55 to 1959-60.

Season	Total count	Number of 1st winter birds	Mean No. per sample of 50	S.D.	S.E. of mean	Number of samples
1954-55 ..	776	314 (40%)	—	—	—	—
1955-56 ..	2020	522 (26%)	13.26	6.40	1.19	29
1956-57 ..	1484	97 (7%)	3.52	3.90	0.78	25
1957-58 ..	1810	955 (53%)	26.32	5.53	0.95	34
1958-59*	Hardly any young in most areas, except Wash and N. Norfolk.					
1959-60* ..	2285	494 (22%)	10.72	6.44	1.02	40

\*Essex observations supplemented by counts from other areas.

### Family Size Counts

In previous seasons it has not been found possible to collect sufficient brood size counts to give a statistically reliable figure, owing to the difficulty of picking out families among the dense jostling flocks of Brent at the tideline. During 1959-60, an attempt was made to remedy this by collecting counts of small parties seen in flight, on the assumption that these would be families. Boyd (unpublished) applied this method successfully to Barnacle Geese on the Caerlaverock Reserve in 1958-59. Parties of more than 8 were ignored, as previous experience has shown that broods of 7 are very rare indeed among Brent. Assuming that each party consisted of two parents with their brood, the distribution of brood sizes obtained is shown in the second row of Table 2. In addition, a few families were positively identified by watching by the writer and by T. Lebreton, and their distribution is shown in the first row. The two means do not differ significantly, and the total distribution and mean is shown in the third row.

**Table 2:** Mean brood-size and frequency distribution of brood-sizes among Dark-bellied Brent in England and Holland, 1959-60.

	Number of young in brood						Total No. of broods	Mean	S.E. of mean
	1	2	3	4	5	6			
Identified families	3	1	3	4	3	1	15	3.40	0.58
Flying Parties	7	12	16	11	6	4	56	3.16	0.20
Total .. ..	10	13	19	15	9	5	71	3.21	0.17

#### Pale-bellied Brent in Northumberland

A count at Holy Island in February, 1960 gave the unusually high proportion of 165 young out of 226 (73%) (R. Marriss). This could scarcely be typical of the whole population, but a good breeding season is indicated.

#### Discussion

The breeding season of 1959 must be regarded as having been rather a poor one for the Dark-bellied Brent populations studied, especially since there can have been few immature birds in adult plumage following the bad year of 1958. The weather records from the breeding areas (extracted from British Daily Weather Reports) show no sign of exceptionally poor conditions, reaffirming the conclusion (Burton 1960) that only wholesale breeding failures such as those of 1958 and 1956 are likely to be detected from meteorological records. Other species breeding within or near the same range—Bewick's Swans and White-fronted (see p. 17) and Barnacle Geese (Boyd, 1961)—seem to have been fairly successful. Conversely, counts from Solway suggest a poor year for Barnacle from Spitsbergen (Boyd, 1961) while Brent there apparently did well (see Holy Island count, above). Probably correlations between Brent and other species are also only to be expected in a very bad year.

In view of the figures for the last two seasons, it does not seem very likely that the increase in Brent numbers noted up to 1957-58 can have been maintained. It is evident from this that although the original period of trial protection for Brent is now over, considerable caution must be exercised in deciding finally when shooting shall be resumed.

#### Acknowledgements

The help of the following observers in submitting counts in the past season is most gratefully acknowledged:—

M. l'Abbé R. Bozec, R. Chestney, T. Lebret, R. Marriss and F. Spitz.

In addition, my sincere thanks are due to all those who have helped with information of various kinds and by finding other observers. I am particularly grateful to M. Francis Roux for his valiant efforts to obtain counts from France. Finally, for their patient help in the field, I am greatly indebted to M. R. Chettleburgh and R. Larner.

#### References

- BOYD, H. 1961. The number of Barnacle Geese in Europe in 1959-60. *Wildfowl Trust Twelfth Annual Report* : 116-24.
- BURTON, P. J. K. 1958. Brent Geese in Essex. *Wildfowl Trust Ninth Annual Report* : 73-9.
1959. Brent Geese in Essex, 1957-58. *Wildfowl Trust Tenth Annual Report* : 91-2.
1960. Brent Goose Population Studies, 1958-59. *Wildfowl Trust Eleventh Annual Report* : 94-8.
- MOFFITT, J. 1932. Second Annual Black Brant Census in California. *Calif. Fish & Game*, 18 : 298-310.
- PHILLIPS, J. C. 1932. Fluctuations in Numbers of the Eastern Brant Goose. *Auk*, 49 : 445-53.