

The numbers of wild geese in Great Britain

Hugh Boyd

Summary

ABOUT 125,000 wild geese have been counted in Scotland, England and Wales in 1960-62. The Pink-footed Goose is much the most numerous (about 53,000), followed by the Greylag (34,000), Dark-bellied Brent (14,400), Barnacle (12,400), European Whitefront (6,700) and Bean Goose (150-350). There are probably 3-4000 Greenland Whitefronts. There are also about 4000 feral Canada Geese and 2000 feral Greylags, so that in autumn about 135,000 free-flying geese can be seen. The Barnacles breeding in Spitsbergen and wintering on the Solway Firth have increased markedly since 1953. Greylags and Brent have also increased recently. The numbers of the others have changed little, despite marked local fluctuations.

Introduction

Increasing knowledge of the distribution of geese in the British Isles has made it possible to make inventories of most species in recent years. The purpose of this short paper is to provide a summary of the results obtained, without attempting to explain in detail how the figures were arrived at, or why the numbers have fluctuated in the ways observed. The methods of inventory have varied and are described separately under each species. In general, the aim has been to secure simultaneous observations of all the major flocks of any species at a time when it is likely to be at its most numerous in this country. Nearly two hundred people have helped in this task in the last five years and their essential contributions are gratefully acknowledged.

Bean Goose *Anser fabalis*

There are only three localities in Britain where Bean Geese now occur annually although stragglers and small flocks are reported from other widely-scattered places each year. As many of the irregular records are open to some doubt, because of uncertainty of identification, it seems safer as well as simpler to ignore them in arriving at estimates of the numbers visiting Britain. Table 1 records the highest numbers counted in each winter at the regular haunts in Norfolk, Kirkcudbright and Dunbartonshire, for varying periods since 1948. The Norfolk figures are due principally to R. H. Harrison, most of the Kirkcudbright counts have been made by A. Donald Watson, and those from Dunbarton by E. A. Maxwell. The largest numbers in all three areas are usually seen in January or February. There is no evidence of movement between these 'major' haunts and in most years the numbers at each stay close to the peak for several weeks, so that the sum of the three figures can be used as a minimal estimate for the 'British' winter population, with perhaps 20-50, or exceptionally 100 (in early 1961) elsewhere. It is not yet clear whether these birds come from a common breeding area, though the fact that the numbers in Norfolk and Kirkcudbright fluctuate fairly closely in parallel supports such a view. Nor is it clear whether the British visitors are part of the larger group visiting Holland (1500-3500 at peak in recent winters) or isolated from them. The regular visitors seem to belong to the race *fabalis*, although the vagrants include examples of *rossicus* and perhaps *johanseni*, a form intermediate between those two, individuals of which may not be identifiable.

Table I. Maximum numbers of Bean Geese seen in three regular haunts in England and Scotland, 1948-49 to 1962-63.

	Norfolk	Kirkcudbright	Dunbartonshire/ Stirling
1948-49	150		
1949-50	54		14
1950-51	120		
1951-52	0		
1952-53	75	200	
1953-54	0	200	
1954-55	0	240	
1955-56	101	215	
1956-57	54	152	25
1957-58	78	190	
1958-59	102	150	
1959-60	80	95	18
1960-61	30	68	12
1961-62	52	130	5
1962-63	47	147	17

Pink-footed Goose *Anser brachyrhynchus*

The first attempt at an inventory of this species was made in November, 1957. Other nearly complete checks have been made in November, 1960, 1961 and 1962. These have been obtained by counts or estimates of the geese at or near all the known roosts of this species which are in use in autumn. The reliability of the counts has varied considerably with place and occasion, due to differences in the abundance and behaviour of the geese, weather conditions and observer's skill. The culmative error is likely to be of the order of 15% in the four years when nearly complete inventories were obtained and 25-30% in 1958 and 1959 when simultaneous cover was not achieved. Thus the figures in Table II, varying from 47,000 to 58,000, suggest that the population has fluctuated very little in the six years 1957-62. Counts in earlier years were much less complete. Attempts to estimate the annual autumn population by capture-recapture methods (Boyd, 1956) are too unreliable for effective comparisons between individual years, but indicate that the average October population in the nine years 1950-58 was about 47,000. Thus there is some indication of a very recent increase in numbers. This seems to be associated with a relative increase in the number of Pinkfeet found in Scotland rather than in England in mid-November. (Later in the winter the distribution may be very different).

These figures relate to the population breeding in Iceland and Greenland and wintering in Great Britain.

Table II. Numbers of Pink-footed Geese in Scotland and England in mid-November, 1957 to 1962.

	Scotland	England	Sum
1957	31,180	18,520	49,700
1958	<i>28,300</i>	<i>20,000</i>	<i>48,300</i>
1959	<i>39,500</i>	<i>12,500</i>	<i>52,000</i>
1960	32,540	14,460	47,000
1961	42,830	12,850	55,680
1962	44,760	13,120	57,880

Italic figures include some interpolated numbers

White-fronted Goose *Anser albifrons*

Two subspecies of Whitefront winter regularly and in substantial numbers in Great Britain. The typical form *A. a. albifrons* occurs almost entirely in

southern England and Wales. Its status in this country in 1947-56 was reviewed by Boyd (1957). More recently the status of *albifrons* in north-west Europe has been discussed at length by Philippona and Mulder (1960, 1962). Recording of the numbers of *albifrons* in England and Wales has been relatively poor, due to lack of observers at some haunts and to the difficulty of making satisfactory counts at others. The situation has been aggravated by a recent tendency for the largest numbers to be present for only a very short time, somewhere in the interval from the beginning of February to the second week in March. For these reasons the figures given in Table III are insufficiently precise to show whether there have been significant variations from year to year.

In 1956 it seemed as if the numbers visiting Britain (5-8,000) represented at least a quarter of the wintering population in north-western Europe. Intensive counting in the Netherlands in the last few years has shown that there are very many more Whitefronts than had been realised and that the British visitors are accordingly much less important than had seemed to be the case. Peak numbers occur in England and in the Netherlands at much the same time. The population in north-west Europe also includes about 5000 others in Belgium, France, Germany and possibly Poland; and it is not wholly

Table III. Estimates of maximum numbers of European White-fronted Geese in England and Wales, 1955-56 to 1961-62, compared with maximum counts in the Netherlands. Dutch data from Philippona and Mulder (1960, 1962). All maxima in February or early March.

Winter	England and Wales	Netherlands
1955-56	8,400	29,000
1956-57	5,900	15,600
1957-58	8,100	48,000
1958-59	6,900	42,000
1959-60	6,300	59,000
1960-61	6,000	65,000
1961-62	7,400	?

distinct from the population wintering in Hungary, Yugoslavia, Greece and Italy. One of the most striking facts about the distribution of this race which has been brought out by ringing in Holland and at Slimbridge is the importance of Mecklenberg, east Germany, as a Whitefront resort from November to January in recent years. Unfortunately no counts are known to have been made there and it is not clear whether any substantial numbers are liable to be found in Germany and Poland in late February, though it is rather unlikely that they should be. A rise in the number of Whitefronts staying in east Germany until January has run parallel to a decrease in west Germany and to the great increase in Holland in the late winter. There has not been any corresponding increase in the numbers reaching England.

The Greenland White-fronted Goose *A. albifrons flavirostris* winters regularly only in the British Isles, but it has not yet proved possible to carry out a thorough enumeration. The great majority (12,000 or so) winter in Ireland (Ruttledge & Hall Watt, 1958). Nearly half the Irish population is concentrated on the North and South Slobbs near Wexford; the remainder are scattered very widely in places often difficult of access on the ground, and the dispersed habits of these geese make it impracticable to search for them from the air with a sufficient probability of detecting nearly all the birds present to justify the extensive and expensive surveys that would be necessary. Several

thousands occur in Scotland, principally in Argyll (especially on Islay) and other western counties. There is one regular haunt in Wales and small numbers occur annually in north-west England and erratically elsewhere. The combined total in Great Britain is of the order of 3-4000. The meagre records available do not suggest any obvious changes in abundance in recent years.

Greylag Goose *Anser anser*

There are 1-2000 native Greylags in the Outer Hebrides and the north and north-west mainland of Scotland and a rather larger number of feral geese in various parts of Scotland and England, particularly in Wigtown. These have not been counted at all precisely. Far larger numbers of Greylags occur in winter, when the whole Icelandic breeding stock moves to Scotland, England and to a much smaller extent to Ireland and Wales. The first attempts at inventories of the immigrant population were made in 1957 and 1958 (Boyd, 1959). Annual counts, simultaneous with those of the Pinkfeet noted above, were made in November, 1960-62. The coverage of known haunts in these years was very nearly complete. For 1959 and 1952 to 1956 the records, though extensive, are far less complete. The estimate for these years included in Table IV are based on the method of paired comparisons. Using November, 1961 as the datum, counts from all roosts inspected in that month in both 1961 and the year in question have been summed to give an index of abundance in that year, this being converted to an estimate of total numbers by multiplying the index by 36,300, the count in 1961. As in the Pinkfeet results, the accuracy of the counts in 1960-62 is of the order of $\pm 15\%$. The estimates for earlier years are less reliable, in particular those for 1954, 1955 and 1959 which are subject to errors of up to 33%. It seems likely that the numbers in 1961 and 1962 were substantially above those in the preceding eight years.

Table IV. Numbers of Icelandic Greylag Geese in Scotland and England in November, 1952-62.

year	number	year	number
1952	25,000	1958	20,000
1953	29,000	1959	20,000
1954	25,000	1960	30,000
1955	21,000	1961	36,000
1956	24,000	1962	38,000
1957	21,000		

Figures in roman are based on simultaneous counts. Those in italic include estimates and interpolations.

Barnacle Goose *Branta leucopsis*

Barnacle Geese breed in east Greenland, Spitsbergen, Novaya Zemlya and Vaigach Island and winter in the British Isles, the Netherlands and Germany. From recoveries of ringed birds and comparisons of age-group ratios in different flocks, Boyd (1961) suggested that the geese from Greenland wintered in Ireland and the islands of western Scotland, those from Spitsbergen on the Solway Firth and those from the Siberian islands in Germany and Holland. Recent ringing and observations have greatly strengthened the evidence for this grouping (Marris and Ogilvie, 1961, Morzer Bruijns, 1961, Timmerman, 1962, Cabot, 1963, Norderhaug, 1963 and unpublished observations by Boyd).

The wide dispersal in winter of the Greenland stock on usually inaccessible Irish and Scottish islands means that the only practicable method of counting

these geese is from a low-flying aircraft. The first aerial survey, made in February, 1957, was confined to Scotland (Boyd and Radford, 1958). Surveys of the entire range have been made in late November and early December, 1959 (Boyd, 1961), March, 1961 and early April, 1962. The results are summarised in Table V. As was stated in the report on the 1959 census, there is a possibility that the given total for Scotland at that time was substantially too low, due to counting difficulties in the principal Scottish haunt. There is very close agreement between the totals in March, 1961 and April, 1962.

Table V. Numbers of Greenland Barnacle Geese in western Scotland and Ireland, 1959-62.

	western Scotland	Ireland	total
December, 1959	5,280	2,800	8,080
March, 1961	9,670	4,140	13,810
April, 1962	9,330	4,400	13,730

The Barnacle Geese from Spitsbergen concentrate in winter on what is now the Caerlaverock National Nature Reserve, Dumfries, though also visiting the Cumberland shores of the Solway Firth and south-east Kirkcudbright. The size of this stock has been well documented since the Reserve was declared in 1957, thanks very largely to E. L. Roberts, the Reserve Warden. The remarkable and gratifying increase from 1957 to 1961 (Table VI) has been temporarily checked, probably due to poor breeding success in two successive years. It is less easy to arrive at figures for the years before 1957, since at that time the geese were more often dispersed and using places where they were rarely counted. Thus the earlier estimates in Table VI must be treated with reserve. Even so, there can be little doubt of a major resurgence in the numbers of Barnacle Geese on the Solway Firth since 1953, this stock being now more numerous than for at least thirty years.

Table VI. Highest recorded numbers of Spitsbergen Barnacle Geese on the Solway Firth, 1946-63.

season	maximum	season	maximum
1946-47	400	1957-58	1,150
1949-50	700	1958-59	1,300
1950-51	420	1959-60	1,650
1951-52	600	1960-61	2,500
1952-53	720	1961-62	2,800
1953-54	1,000	1962-63	3,000
1954-55	1,500		
1955-56	500		
1956-57	1,000		

The totals prior to 1957 are less reliable than those in recent years; that for 1955-56 is especially uncertain.

It may be remarked that the number of Siberian Barnacle Geese seems to have increased even more spectacularly (Timmerman, 1962), the Dutch population reaching the record level of 23,500 in mid-December, 1962 (J. Philippona, *in litt.*).

Brent Goose *Branta bernicla*

All the regular haunts of large flocks of Brent Geese in Great Britain are now confined to the east and south coasts of England. Nearly all the wintering birds are of the dark-bellied race *Branta b. bernicla*, breeding in Arctic Russia

and Siberia. The English birds form a variable component of the total population of *bernicle* (about 24,000 in 1961-62) which also winters on the coasts of north-west Europe. Reasonably complete counts of the regular English haunts have been made since 1954. Table VII shows that the seasonal maxima have tended to increase, despite setbacks apparently due chiefly to poor breeding success in several years, as shown by the age-composition of the population, studied particularly by Burton (1962, 1963). Some of the increase is presumably due to a reduction in "shooting pressure" by the total legal protection given to Brent in Great Britain since 1955, although shooting still continues in Denmark, Germany and France.

Table VII. Maximum numbers of Dark-bellied Brent Geese found in England, 1954-55 to 1961-62, with proportions of first-winter birds in Essex.

Season	Maximum	% young	Season	Maximum	% young
1954-55	10,800	40	1958-59	12,200	0.4
1955-56	10,000	26	1959-60	8,300	23
1956-57	8,500	7	1960-61	14,800	45
1957-58	10,600	53	1961-62	13,900	3

Light-bellied Brent *B. b. hrota* do not at present visit Great Britain regularly or in any numbers. Small parties occur in several Welsh harbours and seem to be reappearing in Scotland, where this race was formerly abundant in several places. Flocks of several hundred appear erratically on Fenham Flats, Northumberland, for short periods from January to March and smaller numbers are seen at times on the north Norfolk coast and in the Wash. The Irish population of this race has been counted carefully in two recent winters (1960-61 and 1961-62) and found to comprise about 12,000 birds (*Irish Bird Reports* for 1960 and 1961).

Canada Goose *Branta canadensis*

The resident population of Canada Geese is entirely feral. A census in July, 1953 (Blurton Jones, 1956) put the total population between 2200 and 4000. Since that time the number has probably increased, though no thorough re-investigation has been made. Drastic artificial changes in distribution have been effected, primarily because some colonies had grown so large as to become a nuisance to agriculture. Surplus geese from several of these colonies have been released in many new localities, resulting in a number of new breeding groups (Ruxton, 1962).

General Remarks

The two points of greatest interest about the numbers of geese to be found in Great Britain are, first, the abundance of different species and races and, second, the rates of change at present affecting the various populations. In recent winters there have been about 125,000 wild geese in Great Britain, more than two-fifths of them Pinkfeet. Bean Geese are much the rarest of our annual visitors and it is perhaps surprising that they continue to occur at all, since in some years very few have been seen. The more plentiful species all seem to have remained remarkably constant in numbers on a national scale despite many changes in distribution and very many fluctuations in local abundance. The reliability of the counting methods available is too low to enable much to be confidently inferred from the relatively small apparent

changes in peak numbers from one year to the next. Nevertheless it is clear that none of the stocks of wild geese coming to Britain has diminished during the last five years. Brent Geese and Barnacle Geese on the mainland of Scotland (in practice, the Spitsbergen stock) have been afforded full legal protection since 1955 and both have increased. So too have the Greylag and, less certainly, the Pinkfoot and Greenland Barnacle, which remain open to shooting. It remains to be seen whether the exceptionally hard winter of early 1963, which led to unusual dispersion of several species, has resulted in casualties heavy enough to alter the encouraging situation prevailing in 1962.

Table VIII. Abundance of wild geese in Great Britain, 1960-62

		mean peak number	% of total
Bean	170	0.001
Pink-footed	53,500	43
White-fronted from Siberia	6,700 }	10,200	8
from Greenland	3,500 }		3
Greylag	34,000	27
Barnacle from Greenland	9,500 }	12,400	10
from Spitsbergen	2,900 }		2
Brent from Siberia	14,400	12
Total		about 125,000	

References

- BLURTON JONES, N. G. 1956. Census of breeding Canada Geese 1953. *Bird Study* 3 : 153-70.
- BOYD, H. 1956. Statistics of the British population of the Pink-footed Goose. *J. Anim. Ecol.* 25 : 253-73.
- BOYD, H. 1957. The White-fronted Geese of England and Wales. *Wildfowl Trust 8th Ann. Rep.* : 80-4.
- BOYD, H. 1959. Greylag Geese in Britain in winter. *Wildfowl Trust 10th Ann. Rep.* : 43-58.
- BOYD, H. 1961. The number of Barnacle Geese in Europe in 1959-60. *Wildfowl Trust 12th Ann. Rep.* : 116-24.
- BOYD, H. & J. D. H. RADFORD. 1958. Barnacle Geese in western Scotland, February 1957. *Wildfowl Trust 9th Ann. Rep.* : 42-46.
- BURTON, P. J. K. 1962. Brent Goose population studies, 1960-61. *Wildfowl Trust 13th Ann. Rep.* : 93-8.
- BURTON, P. J. K. 1963. Brent Goose population studies, 1961-62. *Wildfowl Trust 14th Ann. Rep.* : 84-6.
- CABOT, D. 1963. Barnacle Geese in Ireland. *Wildfowl Trust 14th Ann. Rep.* : 104-6.
- LARSEN, T., & M. NORDERHAUG. 1963. Ringing of Barnacle Geese in Spitsbergen in 1962. *Wildfowl Trust 14th Ann. Rep.* : 98-104.
- MARRIS, R. & M. A. OGILVIE. 1962. Ringing of Barnacle Geese in East Greenland in 1961. *Wildfowl Trust 13th Ann. Rep.* : 53-64.
- MORZER BRUINS, M. F. 1961. Over het bepalen van de verhouding van adulte en juveniele Brandganzen (*Branta leucopsis*) in het veld. *Limosa* 34 : 29-33.
- PHILIPPONA, J. & T. MULDER. 1960. Het voorkomen van de Europese Kolgans, *Anser a. albifrons* (Scop.), in het bijzonder in Nederland. *Limosa* 33 : 90-127.
- PHILIPPONA, J. & T. MULDER. 1962. Tellingen van de Kolgans, *Anser albifrons* (Scop.) in Nederland in 1959-60 en 1960-61. *Limosa* 35 : 39-45.
- RUTLEDGE, R. F. & R. HALL WATT. 1958. The distribution and status of wild geese in Ireland. *Bird Study* 5 : 22-33.
- RUXTON, J. 1962. Goose conservation: Canada Goose. *W.A.G.B.I. Ann. Rep.*, 1961-62 : 36-40.
- TIMMERMAN, A. 1962. De Brandganzen (*Branta leucopsis*) in Nederland. *Limosa* 35 : 199-218.