

Status of Greenland White-fronted Geese in Britain, 1982/83

by David A. Stroud

THE GREENLAND POPULATION of White-fronted Geese *Anser albifrons flavirostris* breeds in west Greenland and winters exclusively in Ireland, Scotland and Wales. In Scotland many flocks winter on islands, and throughout the range a large proportion of the population frequents remote peat bogs for at least part of the winter. These remote wintering sites, and small flock sizes, have meant that past population estimates had to be drawn from scattered information gathered over a period of years. In their thorough account of the winter distribution and abundance of this race, Ruttledge and Ogilvie (1979) estimated the world population in the 1950s at 17,500-23,000 birds, but by the late 1970s numbers had declined to 14,300-16,600.

In response to concern about the recent overall decline in Ireland and Britain, a complete census was attempted during the winter 1982/83, the first 'simultaneous' counts undertaken throughout the wintering area. In Britain the survey was co-ordinated by the Greenland White-fronted Goose Study. Irish results will be presented separately.

For the British survey a network of observers counted specific sites during designated census periods and additional counts were obtained from the Wildfowl Trust Count scheme, from Scottish regional bird recorders and the BTO Winter Atlas project. Two complete counts were attempted: between 1-16 November and between 26 March-10 April, with target dates of 10 November and 4 April. Due to the way many flocks feed over large areas, it was possible for a flock to be missed on a specific date; hence the most accurate count nearest the census date or period has sometimes been used.

RESULTS

Counts and coverage

Virtually every British site was counted at least once during the winter, and Table I gives the counts during the two census periods. Only three sites were not visited: Longa Island, Gairloch (thought deserted since the mid-1970s), Muck and Eigg; no recent information has come to light on the status of the latter flock (M. A. Ogilvie, *in litt.*), and the total of 20 in Ruttledge and Ogilvie (1979) has been used. The island was overflowed in April 1983 during an aerial survey of Barnacle Geese, but no Whitefronts were seen, and neither were there any records on BTO Winter Atlas cards from the islands. This does not necessarily mean that the site has been deserted: geese were present on Lismore Island (Argyll) in November, but not seen. Numbers on the nearby Benderloch Peninsula increased suddenly by about 130 in March, when geese were seen feeding in two flocks; probably this influx came from Lismore Island. At several other sites which had held wintering Greenland Whitefronts in the past, none were found during the 1982/83 census periods. These are not considered further here, but details are given in Stroud (1983).

The main British haunt, on the island of Islay, holds up to half the British population and was counted several times during the winter as part of the Nature Conservancy Council's goose monitoring programme there. On two occasions, exactly the same route was taken on successive days by the same counters to assess the repeatability of the island count. To compare counts, the island was divided into several areas (Figure 1). Whilst it is impossible to draw lines

TABLE I. COUNTS OF GREENLAND WHITE-FRONTED GEESE AT BRITISH WINTERING SITES, 1982/83.

<i>Site</i>	<i>November 1982</i>	<i>Area totals</i>	<i>March/April 1983</i>	<i>Area totals</i>
NORTH-EAST SCOTLAND				
Orkney				
Tankerness Loch & Holm	0	—	34	—
Loch of Ibister & Loons	28	—	46	—
Brocken	6	—	—	—
Caithness				
Stemster Hill	224	—	0	—
Loch of Webster	0	—	47	—
Brubster Marsh	0	—	180+	—
Lochs Scarmclate & Heilen	9	—	77	—
Loch of Mey	0	—	160	—
Loch Toftingall	160	—	0	—
Ross & Cromarty				
Loch Eye	c.30	457	32	576
NORTH-WEST SCOTLAND				
Lewis				
Barvas & Shawbost	14	—	27	—
South Uist				
Lochs Hallan & Kilphedder	20	—	0	—
Loch Bee (NW end)	55	—	0	—
Skye				
Loch Snizort	69	—	7	—
Broadford	7	—	26	—
Muck & Eigg	nc(20)*	185	nc(20)*	80
NORTH ARGYLL				
Tiree				
Loch Riaghain	88	—	17	—
The Reef	221	—	340	—
Loch Bhasapoll	0	—	72	—
Loch an Eilein	16	—	0	—
Loch a' Phuill	47	—	4	—
Coll				
Caoles	56	—	0	—
Uig & Ballard	90	—	128	—
Cliad & Arnabost	197	—	202	—
Lismore Island	nc*	—	nc*	—
Benderloch				
Eriska	60	—	165	—
Port Appin	0	—	17	—
Loch Shiel	0	—	45	—
Mull				
Loch Poit na h-I	52	—	51	—
Loch Assapoll	46	873	—	1068

(continued on next page)

Table I continued:

Site	November 1982	Area totals	March/April 1983	Area totals
SOUTH ARGYLL				
Colonsay	40	—	58	—
Jura				
Lowlandsmans Bay	20	—	24	—
Loch a' Chnuic Bhric	44	—	55	—
Isle of Danna	95	—	90	—
Moine Mhór	60	—	35	—
Rhunahaorine	856	—	475	—
Machrihanish	420	—	500	—
Isle of Bute	70	—	66	—
Endrick Mouth, Loch Lomond	118	1723	110	1413
Islay	3250	3250	3441	3441
GALLOWAY				
Stranraer	280	—	300	—
Bladnoch Valley & Clugston Loch	0	—	19	—
Creetown & Moss of Cree	15	—	7	—
Loch Ken	c.300	595	305	631
ENGLAND				
Banks Marsh, Lancashire	33	33	0	0
WALES				
Dyfi Estuary, Dyfed	73	73	73	73
TOTALS		7189		7282

*See text for these sites.

TABLE II. DISTRIBUTION OF GREENLAND WHITEFRONTS ON ISLAY, 1982/83.

Area	16-19 Nov.	2-3 Feb.	14 Feb.	15 Feb.	1-2 April
Oa	544	569	758	<u>934</u>	558
Ardtalla	0	<u>146</u>	0	0	0
Gruinart	<u>237</u>	<u>235</u>	111	244	109
Gorm	484	296	197	274	<u>655</u>
Rhinns	272	341	<u>657</u>	331	<u>373</u>
Laggan	480	287	<u>444</u>	<u>495</u>	379
Glen	226	<u>308</u>	174	<u>138</u>	165
Kilmeny	1007	<u>644</u>	<u>1535</u>	1084	1202
TOTALS	3250	2826*	3879	3500	3441

*Probably an underestimate. Underlined figures are the peak counts per area. For definition of area, see Figure 1.

around discrete and stable sub-groups it is thought that there is little short term movement between these areas, based on observations of Darvic ringed geese (Belman 1979) and of birds with distinct breast markings (pers. obs.).

Totals recorded 1982/83

Total numbers of Greenland Whitefronts recorded during the census periods are given in Table I. Numbers on Islay changed through the winter, rising from 3,250 in early November to 3,789 in mid-February (Table II). The two counts on 14 and 15 February were made by the same teams covering the same areas of the island. Although the weather conditions on both days were similar, the total for 15 February was 379 less than the previous day, a discrepancy of 9.0%. This was indicative of the problems in counting the island accurately. However, it was considered that the increase of 16% between November and February was real and not a counting error. The total of 3,441 for the Islay spring census was thought to be a slight underestimate.

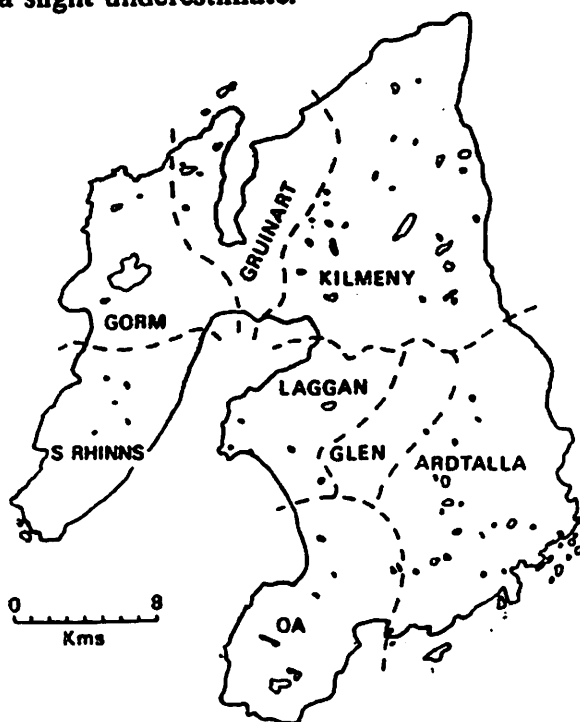


Figure 1. Divisions of the island of Islay used for counting geese.

At a number of other British sites counts were made at regular intervals through the winter. Details of these are given by Stroud (1983).

The total recorded in Britain in the spring was 7,282 (7,300), which compared well with the November total of 7,189 (7,200). However, whilst the overall totals were similar, the regional distribution changed within Scotland. Numbers fell in the Outer Hebrides and Skye, with a corresponding increase in North Argyll. Numbers in South Argyll and Galloway stayed substantially the same, although there may have been some movement away from the former. The increase on Islay over the winter (November to February peak = 629) seemed to be linked to a corresponding fall in numbers at the two main Kintyre sites nearby (Rhunahaorine and Macrihanish decline = 301). Past observations of birds flying from Kintyre to Islay suggest that there may be regular movement between these sites (C. G. Booth, pers. comm.). The census did not detect a major net movement of geese into or out of Scotland during the course of the winter.

Breeding success in 1982

Breeding success seemed to have been a little below average during 1982: the proportion of young seen on Islay that autumn (12.9% — Table III) was similar to that at other Scottish sites (13.8%) and compares with the long-term Islay mean of 14.5% young (Ogilvie 1983). There was no difference between the total proportions of young in Britain between November and April (13.5% — Table III).

Although the census totals for Scotland were constant over the winter, there was considerable variability in the proportion of young between flocks. Whilst some of these differences were not significantly different from the national mean value, not all the variability between sites could be attributed to small samples of aged birds. The proportions of young varied between 5%–20%, but there was little correlation between autumn and spring ageings at the same sites.

It is too early to say whether these differences reflect differential breeding success of geese from different areas in Greenland. Data collected over a longer time span will be necessary to investigate this.

Mean brood size was high (2.9-3.0), indicating that a very small proportion of Greenland Whitefront pairs bred successfully in 1982. Further details of ageing are given by Stroud (1983).

DISCUSSION

Past counts of British flocks of Greenland Whitefronts have been summarised by Ruttledge and Ogilvie (1979) and Owen (in press), and totals for Islay given by Ogilvie (1983). Ruttledge and Ogilvie estimated a British total of 6,500-7,300 Greenland Whitefronts in the late 1970s. Some flocks they described have declined in numbers since 1979 (eg. Caithness), whilst other areas now hold larger numbers. Notable examples are Coll with 343 (Ruttledge and Ogilvie: c.50), Tiree with 433 (Ruttledge and Ogilvie: c.150), and Skye with 115 in 1978/79 (Ruttledge and Ogilvie: "probably deserted").

Several previously unreported sites have

come to light since the 1979 paper and were not included in the Ruttledge and Ogilvie totals: Barvas on the Isle of Lewis, two flocks on Mull, Isle of Danna in Argyll, and Loch a' Chnuic Bhric on Jura. In calculating the size limits of the British winter population in the 1970s, Ruttledge and Ogilvie (1979) took the highest and lowest annual counts for the period 1974/75 to 1978/79. Using this method for the above 'new' sites, it can be calculated that an additional 130-290 geese were involved. Thus the mid-1970s British population was 6,630-7,590. The results of the two 1982/83 counts — 7,200 and 7,300 — fall within the mid range of that estimate and indicate no significant increase or decrease of this population since the 1970s.

Ruttledge and Ogilvie (1979) estimated that the world population of Greenland White-fronted Geese had fallen from 17,500-23,000 in the 1950s to 14,300-16,600. In Ireland there had been a 50% decline in this period, from 12,700-17,300 to 7,500-8,600. In Britain, however, numbers had risen by about 13% from a 1950s level of 4,800-5,900. The situation was (and is) changing and it is very difficult to obtain past 'instantaneous' assessments for the size of the British population.

TABLE III. PROPORTIONS OF YOUNG IN GREENLAND WHITE-FRONTED GOOSE FLOCKS, 1982/83.

	<i>No. aged</i>	<i>No. juvs</i>	<i>% juvs</i>	<i>No. broods</i>	<i>Mean brood</i>
<i>November 1982</i>					
Islay	1309	169	12.9	49	2.71
Rest of Scotland	1546	214	13.8	54	3.16
Total Scotland	2855	383	13.4	103	2.95
England & Wales	78	13	16.6	4	3.25
BRITAIN	2933	396	13.5	107	2.95
<i>March-April 1983</i>					
Islay	1143	167	14.6	48	2.96
Rest of Scotland	617	71	11.5	17	3.17
SCOTLAND	1760	238	13.5	65	3.01

NOTE. No Whitefronts were aged in England or Wales during March-April 1983.

The 1982/83 results again emphasise the prime importance of Islay as a wintering area for this race, holding up to 50% of the British population and possibly as much as 25% of the world population. Prompt action on Islay is required to provide necessary protection for bogland feeding and roost areas which are increasingly under threat from commercial peat-cutting and forestry. Loss of these areas is likely to have a severely detrimental effect on Greenland White-fronted Geese wintering on the island.

In the light of its small population size, the low productivity of the race — which is possibly a feature of its breeding biology (Fox and Stroud 1981) — gives cause for concern. When it is considered that Britain may hold up to half the world population, the calculation (from autumn ageing) of a mere 971 young in 329 families in Britain indicates that urgent conservation measures are needed to reduce disturbance and associated mortality, as well as habitat loss, on the wintering grounds, breeding areas in Greenland and staging areas in Iceland.

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SUMMARY

Greenland White-fronted Geese wintering in Britain in 1982/83 numbered 7,200-7,300 birds, within a recalculated range of 6,630-7,590 for the mid-1970s. There was no evidence for any major net movement into or out of the country during the winter. Productivity was low in 1982, with only 13-14% of juveniles in winter flocks.

REFERENCES

- BELMAN, P. J. 1981. Ringing and recoveries of Greenland White-fronted Geese. Pp. 123-138 in: A. D. Fox and D. A. Stroud (eds.), *Report of the 1979 Greenland White-fronted Goose Study expedition to Eqaungmiut Nunât, west Greenland*. Aberystwyth.
- FOX, A. D. and D. A. STROUD. 1981. The life history and ecology of the Greenland White-fronted Goose. Pp. 148-155 in: A. D. Fox and D. A. Stroud (eds.), *Report of the 1979 Greenland White-fronted Goose Study expedition to Eqaungmiut Nunât, west Greenland*. Aberystwyth.
- OGILVIE, M. A. 1983. Wildfowl of Islay. In: *Proc. Symp. on Nat. Envir. of the Inner Hebrides*. Royal Soc. Edinburgh (in press).
- OWEN, M. (in press). Greenland White-fronted Goose. In: *Wildfowl in Great Britain*. 2nd edition.
- RUTTLEDGE, R. F. and M. A. OGILVIE. 1979. The past and current status of the Greenland White-fronted Goose in Ireland and Britain. *Irish Birds* 1 (3): 293-363.
- STROUD, D. A. 1983. *Greenland White-fronted Geese in Britain: 1982/83*. Aberystwyth (cyclostyled).

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