SUMMARY

The autumn census located 10,911 geese in Britain of which 6,126 were on Islay (56.1%). There was apparently a small increase in the spring to 11,395 geese, 6,486 of which were on Islay (56.9%). The 1986 autumn count represents a small decrease of 2.0% on the autumn count in 1985 (11,145). Breeding success was below average with only 10.1% juveniles from a sample of 3,190 on Islay, and 11.8% juveniles elsewhere in Scotland (n = 2,164).

Details are given of the successful years events at Eilean na Muice Dubh SSSI (Duich Moss) which has seen the start to blocking all drainage ditches and the acceptance of peat supplies from another bog. The successful outcome of this long conservation case was directly due to the initiation of legal proceedings against the British Government by the European Commission in the European Court of Justice, for breach of the EEC Birds Directive.

INTRODUCTION

The winter of 1986/87 has been a year of mixed fortunes for Greenland White-fronted Geese in Britain. Whilst below average breeding success meant fewer young in the autumn flocks, there were several notable advances on the habitat protection front. Foremost amongst these was the acceptance that Eilean na Muice Dubh SSSI (Duich Moss) on Islay will not be cutover for commercial peat extraction, and that all the drainage ditches (both legal and illegal) have now been dammed. This virtually concludes the long case to protect this crucial internationally important peatland that has now been running for over four years. However, there are still some important issues to resolve.

The media attention that the Eilean na Muice Dubh case has attracted, and the coverage of continuing conservation problems on Islay has resulted in a fairly 'high profile' for Greenland Whitefronts in the year. Further successes on the habitat protection front have been the announcement of the large Rhinns of Islay SSSI, and the abandonment of plans for a multi-million pound holiday complex within the SSSI in north-west Islay just days before a major public inquiry.

Against these successes have to be set the continuing decline of several of the smaller Scottish flocks, and further loss of peatland habitat in Caithness and Sutherland to afforestation.

AUTUMN ARRIVAL DATES

The year was unusual in that we could contrast goose arrivals in Britain with numbers on passage in Iceland, where a small team of people were counting geese (Francis & Fox 1987). The contrast between numbers observed in Iceland and arrivals is made later in this report.

The first birds reported were four Whitefronts seen flying just north of the Isle of Danna on 27 September, although they did not apparently settle there. On Islay the first arrivals were seen flying over Loch Gruinart on 30 September; numbers at Loch Gruinart rose to 249 by 11 October, 495 by October 17 and a peak of 585 by 21 October. Elsewhere on Islay, 13 birds were seen very high over the Port Ellen area on 2 October. On 3 October a total of 72 arrived at Ardnave in 8 small flocks and at least 400 birds were present on Islay on that date.

Elsewhere there were a wide range of 'first seen' dates. At Stranraer geese seemed to be early, with first birds occuring on the 2 October and building to 250+ on 4 October. On the Dyfi Estuary, the first few birds in arrived on 3 October, with 13 by 7 October, building to 75 by 26 October. Similarly, the first arrivals on Orkney occurred on 3 October.

The flock at Loch Ken arrived somewhat later with two small flocks being seen on 8 October. By 18 October there were 43 geese with more arriving later. At Loch Lomond the first 31 geese were also seen on 18 October.

By 19 October, 181 Whitefronts had arrived at Rhunahaorine. There were also records of 20 Whitefronts at Benderloch on 17 October, 150 at Shebster, Caithness on 26 October, and first sightings on Skye on 29 October. It is possible that these may have arrived earlier and yet been missed, and this highlights the problems of confirming that arrival dates are just that and do not reflect patterns of search instead.

SPRING DEPARTURE DATES

Spring departure dates were early in comparison with other recent years. Birds left Loch Lomond on 17 April, a similar date to that observed at Loch Ken. Here detailed counts found 288 on 12 April, 212 on 17 April, yet by 20 April there were only 5 and none were found on 23 April. Observations of a migrant flock were made near Skye on 17 April where 120 Whitefronts were seen flying north over Greshornish at 09.50. These dates agree well with observations at Rhunahorine where the departure was noted between 13-19 April.

On the Dyfi Estuary, numbers declined markedly between April 12 (85) and April 20 (17) with the last 12 birds seen on April 21. On Tiree, Whitefront departure seemed a little later, with all birds gone by about 2 May. Over 700 geese were seen flying over from south-east to north-west in two flocks (400 & 300) on 24 April.

On Islay birds started leaving on 20 April with the main departure from 23-25 April. There were still a few geese about on 28 April with one flock of 200 present the previous day at Rockside. The last regular birds at Loch Gruinart were 4 seen on 25 April, although a group of 50 flew over on 4 May and a single was present on 23 May.

COUNT COVERAGE

Count coverage for the autumn census was generally good, although the first count on Coll and Tiree could not be made until January. Counts on Islay changed during the year with the recent intensive NCC/GWGS counts scaled down. Two main counts organised by Malcolm Ogilvie for the NCC (each of two days) took place as usual in autumn and spring, but other counts were more infrequent.

Much of the detailed work on Islay over the last four winters has involved the evolution of a reliable count procedure that would check all potential feeding sites on the island in the course of a single day. The standard method was to use four teams, each of two people, who covered separate areas according to a repeatable pattern. The census method and route has now been described in some detail in an NCC report (Bignal, Easterbee & Stroud 1987) and copies of this are deposited at the Scottish Ornithologists Club Library and with the Wildfowl Trust.

Coverage through the winter of the Kintyre flocks at Rhunahaorine and Machrihanish was very thorough, owing to a detailed survey undertaken by Sue Bignal for the NCC. For the first time thorough count procedures for each site have been worked out and monthly counts made throughout the winter. The detailed results were submitted to NCC and are summarised later in this report.

POPULATION SIZE

Spring 1986

As usual, the counts of recent years sometimes require revision following the late arrival or 'discovery' of counts that can sometimes fill gaps in our otherwise good coverage. A slight revision to the totals of 1985/6 is given in Table 1 and details are given in Table 2. These differences involve changes to the totals for the Isle of Bute in autumn and spring which brings the autumn national total to 11,128. Other count changes or additions occurred in mid-winter and do not involve a revision of the national census totals.

Autumn 1986

The census of November 1986 found a total of 10,911 geese in Britain (Table 3). Of these, 6,126 were on Islay. Proportionately, this is slightly down on last year from 57.3% to 56.1% of the British total. It is becoming particularly noticable that large numbers are occurring in a small number of areas. In the autumn over 82% of the British population were wintering in just five areas: Islay, Machrihanish and Rhunahaorine on Kintyre, Tiree and Stranraer. Local densities need not be very high since, on Islay for example, birds are distributed in scattered flocks over a wide area. However, it is disconcerting that the large number of remaining sites/areas only hold less than 18% of the total British population.

Spring 1987

The census of March/April 1987 found 11,395 geese, a rise of 484 (4.2%) geese from the autumn. This is unusual as in most recent years there have been slight declines between the autumn and spring census totals. There was a slightly higher proportion of the total on Islay (56.9%).

BREEDING SUCCESS IN 1986

First indications of breeding success in 1986 were gained in Iceland during early November. Here, a sample of 566 birds aged yielded 17.8% young (Table 4). At the time this was thought to be a slight over-estimate and the problems with this assessment are discussed later. Mean brood size of 38 broods was 2.66 and this is unlikely to have been biased by the problems possibly affecting proportion of young.

At Wexford, 16.6% young were seen in a sample of 5,046 whilst in the rest of the country, there were 14.4% young from a sample of 2,270. Mean brood sizes in Wexford were 3.43 (n = 201) and 2.48 for the rest of Ireland (n = 94).

In Britain the overall proportion of young was 10.8% (Table 4). There were 10.1% young in a sample of 3,190 geese on Islay, whilst the overall proportion of young in the rest of Scotland was slightly higher at 11.8%. The overall figures conceal a slightly higher proportion of young in flocks from north-east and north-west Scotland (13.1% from an overall sample of 504), compared to lower numbers at Machrihanish (10.7% young in 374), Rhunahaorine (11.5% in 686) and Stranraer (11.8% in 600).

Mean brood size was apparently higher on Islay (2.88: n = 112) than elsewhere in Scotland (2.49: n = 72) (see Table 4).

Overall, the productivity of British wintering Greenland White-fronted Geese was slightly lower than average.

COUNTS OF GREENLAND WHITE-FRONTED GEESE IN IRELAND

The counts made in Ireland last winter were substantially similar to those of the previous year. The autumn count at Wexford was 7,032 with a slight increase to 7,780 in the spring. The 'rest of Ireland' totals for autumn and spring were 3,185 and 4,106 respectively.

Work is proceeding on a major review of all British and Irish counts undertaken in the course of the last five years monitoring, and copies will be sent to all counters upon eventual publication.

Figure 1 Feeding Greenland White-fronted Geese in Myrar, Western Iceland, May 1986. (I Francis)

GREENLAND WHITEFRONTS AT LOCH GRUINART, ISLAY.

Pete Moore

In 1983 the RSPB purchased a large area of farmland at Loch Gruinart on Islay. This is the most important single area for the Greenland race of Barnacle Geese in Britain, with substantially all the Greenland population passing through in the autumn, and a large proportion staying to over-winter. One of the most important Reserve tasks is to monitor goose numbers, field by field, so as to be able to relate field use by geese to management patterns.

The Reserve is counted twice each week during the period the geese are present, and whilst concentrating on Barnacle Geese, which are the principal object of Reserve management, all Greenland White-fronted Geese present are also counted. The results of the last two years counts have been presented as reports to the RSPB (Moore 1986, 1987). This note summarises the major findings.

In both years highest numbers occurred in early autumn, with numbers progressively declining through the winter, to minimal numbers in spring.

In 1985/86 a total of 68 counts were made. The first birds on the Reserve were seen on 1 October when 14 were present. Numbers subsequently rose to a peak of 630 on 26 October. Thereafter numbers generally decreased through the season with only erratic records after 24 April. The final record was of 14 birds on 13 May. In November, up to 6% of the Islay population were feeding on the Reserve, but for the rest of the winter it was less than 3%.

In 1986/87 a total of 60 counts were made. The first record was of 11 birds flying over the loch on 30 September. Numbers rose to a peak of 585 on 21 October, thereafter falling throughout the winter. As in 1985/86 the decline in numbers was quite rapid through November and more gradual thereafter. Regular records had ceased by the end of April, but there was a group of 50 flying over the Reserve on 4 May and a single was still present on 23 May. The Reserve's peak count of 585 in October represented 10.1% of the island total. By November this had fallen to 4.6% and by the 2/3 April count to only 0.4%.

Some of the heaviest Greenland Whitefront use has been of rushy fields on the wetter areas of Gruinart Flats, although a small number of re-seeded fields have also been used. For a short period this winter, a turnip field off the Reserve attracted a large number of Whitefronts. In comparison to Barnacle Geese, the Greenland Whitefronts used markedly different areas and types of field, concentrating on the more poorly drained areas with marshy vegetation.

The high October use of the Reserve undoubtedly reflects the transient use of this area by birds which winter elsewhere. On 9 October 1985, the Darvic ringed goose K26 was seen at Gruinart on the first day of the main autumn goose arrival. Yet by 24 November it had moved down the Rhinns of Islay to Coultorsay where it spent the rest of the winter, as it has done the previous year. This is a clear example of a bird wintering elsewhere on Islay, but using Gruinart for a short period in the autumn. The further decline into spring probably reflects the build up of the birds in the Rockside/Machir area where large flocks form in the weeks prior to the spring migration.

The RSPB Reserve also includes a small part of the large Feur Lochain - Moine nam Faoileann roost. Regular counts have been made of both that part of the roost on the Reserve - Loch an Fhir Mhor - as well as the whole roost. In 1985/86 the peak numbers using this roost were 1,620 on 10 November (M.A. Ogilvie) and 1,100 on 13 December. In 1986/87 1,500 geese were counted into the roost on 24 October. Numbers dropped to lower levels later in the winter, with 550 on February 22 and 320 on 15 April. High numbers in autumn reflect the large numbers that feed for a month or so after arrival on the stubbles at Sunderland and Rockside farms south of Loch Gorm. Later in the winter, these birds move to traditional feeding areas further south on the Rhinns, as has been shown by observations of marked birds.

Earlier studies have shown the use of the Feur Lochain - Moine nam Faoileann roost to be complex, with birds also using Loch Corr and Glac na Criche at different time of the winter, and apparently also according to weather conditions. With Whitefronts also moonlight feeding in fields on occasion, it is difficult to interpret counts, except to say that this peatland is clearly of major importance as a Greenland White-fronted Goose roost and night-time feeding area.

Figure 2 Greenland White-fronted Goose, Hvanneyri, Western Iceland, May 1986. (I Francis)

LEGISLATION AND SPECIES PROTECTION

Licensing of shooting on Islay

During the year there have been several calls for radical changes to goose shooting procedures on Islay, including proposals for a major cull of Barnacle Geese. For the first time there have been several complaints about agricultural damage allegedly caused by Greenland Whitefronts. It is not clear to what extent these complaints are genuine or if Whitefronts are now being included with Barnacle Geese in rising anti-goose and anti-conservation feeling from some quarters.

In the past it has been DAFS policy not to issue licenses for the shooting of Greenland White-fronted Geese, and this still seems to be the case. However, we are concerned that this policy may change in the face of a large number of demands for licenses. If a policy change occurs, prospects are not encouraging. DAFS have issued licenses to shoot Barnacle Goose virtually on request, yet have been unable to explain or define what constitutues the 'serious agricultural damage' allegedly being caused by the Barnacle geese. Further, there has been little attempt to ensure that license issue is preceeded by serious and intensive efforts at scaring geese from 'seriously damaged' areas.

If DAFS are to even entertain license applications for Greenland White-fronted Geese, they must be able to define what constitutes 'serious agricultural damage'; they must be able to demonstrate that this was caused by Greenland Whitefronts; and they must demonstrate that all possible means of scaring birds away from an area have been tried and failed. Even if all scaring fails, licensed shooting to kill may not be the most appropriate way of tackling such agricultural problems.

Protection in Ireland

Between 1982/83 and 1984/85 the Irish Government introduced a four - year shooting ban throughout the whole of Ireland. This was to enable essential research to be undertaken on the population size and conservation status of Greenland Whitefronts. In winter 1985/86 limited shooting was reopened at Wexford, against the advice of the Wildlife Advisory Committee, the Minister's advisors in these matters. There was considerable concern in some quarters at this partial re-opening of shooting, and the Irish shooting organisations lobbied strongly that changes to legislation should be uniform throughout Ireland.

This is indeed what has now happened, with the re-imposition of a total ban during 1986/7. The ban seems to have been successful with no major breaches, although undoubtedly poaching continues at several of the small 'down country' flocks. However, it is precisely these flocks, often holding not more than a dozen birds, that are least able to stand <u>any</u> shooting, and declines have continued in many areas.

The Greenland White-fronted Goose Study is most concerned that shooting of these flocks could be officially reopened, since this would almost certainly hasten their loss. Despite the recent improvement in overall numbers and numbers of young produced in summer 1985, there is still a long way to go before the population can sustain intensive hunting in Ireland.

Trouble in Kintyre

On 15 January, two geese from the Rhunahaorine flock were seen with their left feet severed. One was unable to walk, whilst the other was only able to hobble with great difficulty. The birds soon disappeared from the flocks and were not seen again; presumably dying from their injuries or of starvation.

In the past, a farmer in this area has talked about setting gin-traps for geese to reduced alleged depredations on turnips, although there was no direct evidence in this case to link such trapping with these amputees. We are, however, unaware of any 'natural' means by which geese could spontaneously lose a foot.

Another incident involved the illegal shooting of a juvenile Whitefront at Machrihanish in November. The bird was retrieved alive by local wildfowlers but was unable to fly and had its throat cut. A party of wildfowlers from the south of England was in the area at the time. The incident was reported to the police, but no further action was taken.

There are particular problems in this area, as in some others, owing to the close proximity of flocks of Greylags and Whitefronts. This puts Whitefronts atconsiderable risk during periods of Greylag shooting, quite aside from the disturbance caused.

HABITAT AND SITE PROTECTION

Rhinns of Islay SSSI

During the year the NCC announced a major new SSSI on Islay, which may prove to be of fundamental importance for long-term Greenland Whitefront conservation. The new SSSI extends across substantially all the Rhinns, from Ardnave to Portnahaven. It excludes improved arable land and forestry plantations, but takes in considerable areas of poorer, low intensity farmland often with rushy, damp fields. The site is contiguous with several previously notified sites important for Greenland Whitefronts, including the Feur Lochain and Glac na Criche peatland roosts.

Greenland Whitefronts are one of a number of scarce bird species that use this habitat, others being Chough, Hen Harriers, Merlins, Corncrakes and breeding waders. However, large areas of such low intensity agricultural land with important backing moorland and peatbogs have been afforested in recent years. A high proportion of the moorland on the Rhinns has been afforested in the last 8 years. This includes areas such as Gleannagaoidh (Valley of the Geese) and Cnoc nan Geoidh (Hill of the Geese) - areas that were almost certainly traditional Greenland White-fronted Goose feeding or roost areas.

Unfortunately, certain elements on Islay have vociferously denounced the SSSI, raising fears of widespread job losses due to conservation policies. Nothing could be further from the truth. The new SSSI, which GWGS has previously called for (Stroud 1985), will not only ensure the protection of these important habitats from damaging land-uses, but will also provide a means of actively channelling conservation money into the local economy through management agreements. In this way no owner or occupier of land on the new SSSI will be adversely or financially affected by the notification and many stand to benefit considerably.

The Rhinns of Islay SSSI is a major new site containing internationally important populations of several species, including Greenland Whitefronts. The success of the site protection and management now possible, depends much on the current negotiations between individual owners and occupiers, and NCC.

Holiday complex in north-west Islay

One of the issues with which the Greenland White-fronted Goose Study has been greatly concerned, has been a proposal to build a multi-million pound holiday complex in north-west Islay. This would have impinged on a substantial part of the new Rhinns of Islay SSSI, and the disturbance caused by the construction and operation of such a complex would have caused considerable disturbance to a number of rare breeding and wintering birds, including Greenland Whitefronts, quite aside from major disruption of sensitive habitats.

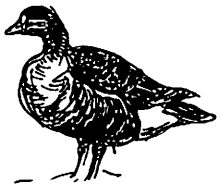
Our case was not against the complex in itself, but rather that the location was inappropriate for a venture of this scale. Indeed, wildlife tourism is likely to be of increasing importance for the economy of Islay and is to be encouraged, but this development was insensitive, inappropriate and illconceived. Not only did it substantially breach the District Council's own Local Plan, but it also affected both SSSIs, and a proposed Special Protection Area under the EEC Birds Directive.

Despite a high level of local opposition, the Argyll & Bute District Council Planning Committee (who have previously supported plans for peat extraction at Eilean na Muice Dubh SSSI), passed the plan 'on the nod', with minimal consideration of environmental consequences. Since the site was registered as of Nature Conservation Review status (ie potential National Nature Reserve quality) by the NCC, under National Planning guidelines the case was referred to the Secretary of State for Scotland. Under strong public pressure, he then decided to hold a Public Inquiry to investigate the issues.

Just days before the Inquiry, the developer, withdrew his planning application and the Inquiry was cancelled at a day's notice.

Prior to the Inquiry, the NCC had announced the Rhinns of Islay SSSI, formalising the status of the area as of international importance for a large number of bird species (several listed under Annex 1 of the EEC Birds Directive) and of national importance for several habitats, particularly peatlands used by Greenland Whitefronts. Following this announcement, the developer wrote to the Scottish Office calling for a suspension of the Inquiry, a delaying tactic which fortunately failed. Elements on the island linked the announcement of the SSSI directly with the withdrawal of the plans, although in fact the two were entirely separate.

Whilst we are pleased that the plans were dropped, the Inquiry would have been of significance in itself. The NCC, RSPB and other conservation bodies had very strong cases against the development, whilst there was a large body of local opposition to the plans from islanders. To have had conservationists and islanders both publicly arguing together for the protection of Islay's natural heritage would have been a major step forward.



EILEAN NA MUICE DUBH: Year Five - game, set and .....?

The case of Eilean na Muice Dubh (Duich Moss) has dragged on for almost five years now, and has proved to be a test case for Scottish conservation. As described in previous reports and elsewhere (GWGS 1986b), a simple planning case which could easily have been resolved, has been turned into a pivotal test of European conservation legislation by a mixture of obstinacy and Government short-sightness.

Five years on, the case is on the brink of being permenantly resolved in favour of conservation, geese and common sense. This account of the years developments continues that of last years report (GWGS 1986a).

Commission stands firm

Early in the year the European Commission opened infringement proceedings against the UK Government for a breach of the 'Birds' Directive through its decision to allow extraction of peat from Eilean na Muice Dubh. In January 1987, Stanley Clinton Davis, the Environment Commissioner stated that "the Commission has recently decided in principle to proceed to the next stage of legal proceedings by issuing a 'reasoned opinion' in this case. This will be issued unless, in the meantime, the UK authorities come forward with firm undertakings both with regard to the ditches which have already been dug on the site as well as on the use of an alternative site."

The issuing of 'reasoned opinion' is in fact a very serious further stage in the process leading towards a prosecution at the European Court of Justice. What has increasingly annoyed the Commission is the slow pace of the investigation into alternative peat supplies at Castlehill, just one of the many alternative peat sites on Islay.

The Castlehill investigation was announced by the Scottish Office on 29 May 1986 and it was implied that the situation would be resolved speedily. Indeed, the Scottish Office announced that "legal proceedings are suspended for the time being, with each side reserving its position". However, this was not the case, and GWGS has written evidence from the Commission that proceedings are not, nor ever were, suspended. The Scottish Office continue to refuse to retract their misleading statement however.

This aside, the Commission were content to leave this inaccuracy on the understanding that a rapid survey would be undertaken. Yet it was only in January 1987 that the Macaulay Institute submitted their commissioned report on the peat reserves at Castlehill to the Scottish Office. This report only considered the quantity of peat present and the gross physical composition of the peat.

The Macaulay report on Castlehill was encouraging, and apart from a few reservations on items of details, GWGS welcomed the report. It showed that the site is of 422 ha, of which 155 ha contains peat at least two metres deep. The average peat depth is 2.9 metres. The total workable reserves of raw peat was calculated to be 2,900,000 cubic metres, and air dried to 40% moisture content there is an estimated 820,500 cubic metres of peat. Compared to Scottish Malt Distillers maximum projected demands of 10,000 cubic metres per annum (their current use is 2,000 cubic metres per annum), it is clear that there are more than adequate reserves for the foreseeable future.

Helicopter mercy dash.....

Whilst the Macualay Institute reported on the quantity of peat present, they did not consider the quality which was to be investigated by SMD Ltd themselves. Peat samples had not been cut from Castlehill until late in the summer and were then left on the site. Following the onset of winter rains, SMD claimed the track to Castlehill was impassable, preventing the collection of peat to test it suitability for whisky production. In fact, any four-wheel drive vehicle or tractor could have collected the peat at any time during the winter - a fact attested by locals.

Having stated that the track was impassable, SMD delayed collection of peat until February 1987 when a helicopter was used to fly the peat from the site to the Distillery where it was to be tested for quality. This was pure window dressing.

The peat was apparently still sodden and had to be dried under cover until it could be tested. This occurred late in April and it apparently produced excellent whisky.

These results confirm our original assertion that there are suitable alternative sites for peat extraction. Both our own and the NCC submissions to the Secretary of State for Scotland in February 1984 referred specifically to Castlehill. Yet it was only the intervention of the European Commission that prompted the exploration of known alternatives. This waste of time, during which damage has already occured to Eilean na Muice Dubh, is deplorable. A rational planning decision would have considered these areas in the <u>first</u> instance, not the very last.

Council of Europe

In December 1985 the Council of Europe tabled a condemnation of the Government's decision to allow peat extraction at the meeting of the fourth meeting of the Standing Committee on the Berne Convention (on the Conservation of European Wildlife and Natural Habitats) in Strasbourg. The recommendation noted the various articles of the Berne Convention that had been breached and recommended the British Government to:

1: "Suspend permission for the extraction of peat until proper environmental impact studies have been carried out;

2: Study alternatives for peat extraction in areas of lower ecological values;

3: Reconsider the permission if the development is proved likely to cause severe deterioration of an endangered habitat protected under the the terms of the Convention."

In the event, the recommendation was not voted on then, due to intense pressure by the UK Government on the other parties. However, it was agreed to record the concern of some governments at the reports and leave the recommendation open for reconsideration at the next years meeting.

The next meeting of the Standing Committee took place in December 1985. The minutes start by recording "As no further information had been received from the United Kingdom since its last meeting, document T-PVS (85) 18 (the resolution) was again presented to the Committee."

It continued "The United Kingdom delegate apologised for not having replied to the Secretariat's letters. He considered that the recommendation embodied in document T-PVS (85) 18 was inappropriate....." "The representative of the RSPB expressed his surprise that the document had been described as wide of the mark in certain respects by the United Kingdom delegation." RSPB drew attention to the continuing lack of any action to block the ditches on the site pending resolution of the issues. "The representatives of the RSPB drew attention to the permission given in January 1986 by the Scottish Office to block the drain in accordance with specifications to be agreed by the NCC. This matter was considered urgent enough to lift restrictions on winter activity on the Moss, yet 11 months later no work had been undertaken. He considered such work was urgent to prevent further damage to the site. The United Kingdom delegate disagreed on this point."

The Committee noted the comments of the various parties "insisted that the matter was an important one, and decided to leave the item on the agenda of its next meeting." It is obvious that the attitude of the Government to the Committee has been to block any possible action and to stall for time - even to the extent of not answering any letters on the subject. In contrast to the European Commission, the Standing Committee has failed to take any decisive action on this matter, or indeed several other major conservation cases (Batten 1987).

International Mire Conservation Group

Last year's report (GWGS 1986a) drew attention to the visit of the IMCG to Scotland. At the end of their stay, these international peatland ecologists issued a resolution concerning Eilean na Muice Dubh, and calling on the Government "to rescind planning consent in view of the numerous alternative sources of peat for distilling purposes on Islay".

The response of the Government was the predictably standard letter from the Scottish Office claiming that the Secretary of State had taken into account all the evidence when deciding the issue and that he had decided that there was not going to be any ecological damage to the site..... Whilst maybe not achieving striking results at the time, such support has undoubtedly increased pressure on the Government to resolve the case, and it is that much more effective when conservation concern can be shown to be international.

A Ditch too Far

In September 1985, Dr Kramer of the European Commission discovered a large ditch in the Phase 2 area of the bog. This ditch had been dug in contravention to several of the clear conditions given in the original planning consent (GWGS 1986a).

Following the discovery of this illegal ditch. which NCC considered to be very damaging to the hydrology of the site, there was intense pressure for its restoration. Yet, as explained previously (GWGS 1986a), although the Scottish Office formally lifted the restriction on winter working at the site, no restoration was undertaken. The NCC were unable to enforce restoration as the area concerned was subject to planning consent under the Town and Country Planning (Scotland) Act 1972, the Scottish Office denied it was their job to enforce restoration, the Argyll and Bute District Council, who could have enforced restoration, declined to do so, and Scottish Malt Distillers likewise declined to repair the damage that they had caused. Approaches to Guiness PLC, who had taken over the company and had previously supported campaigns to conserve rain forests, produced no policy change.

This situation persisted throughout 1986, with little movement by any of the parties and no way that conservation bodies or a sympathetic local councillor could force restoration despite the fact that the ditch continued to drain and affect the hydrology of the site. On 16 October 1986, Giuness actually claimed that "the company is not permitted by the Scottish Development Department to undertake any work after the first of October each year, so it is not possible to act on damming

until Spring". This was being somewhat 'economical with the truth' since the SDD had specifically lifted this very restriction on 17 January 1986 in order to allow restoration. It was even more disturbing when the Director of NCC for Scotland made this same misleading claim in correspondence on 24 November 1986. Such distortion of the real issues has been typical of the whole case.

In January 1987, the NCC stated that they "would nevertheless wish to see the dams installed before the end of February in order to ensure at least some re-wetting of the peat, and the retention of as much winter water as possible before the spring dry spell and the start of the growing season."

February came and went without any dams being installed. So did March. And April. There was no action in May. Or June. Or July.

It was only in August, nearly two years after the illegal Phase 2 ditch was discovered, that the first dam was installed. There are now several dams along the lenght of the ditch, but more are clearly needed in order to lift the water table to its previous level. It really has been outrageous that it has taken so long to restore this ditch, which even SMD admitted was illegally constructed. There are surely lessons to be learnt from this fiasco.

The case of the Special Protection Area

As a sub-species listed under Annex 1 of the European Birds Directive, The Government is obliged to declare the most important sites for Greenland White-fronted Geese 'Special Protection Areas'. It was the breach of this Directive that allowed the Europen Commission to intervene in the case, and to force reconsideration of the issues. It is of interest to examine the Government's attitude to the formal notification of the site as a Special Protection Area.

On 10 September 1984, immediately following the granting of planning permission and the formal complaint by the RSPB to the European Commission, the Enviromental Commissioner wrote to the Government. "Considering the area is clearly of Community importance for bird preservation, may I ask your government to ..... add this area to the UK list of special protection areas."

However, by the June 1985 nothing had happened and William Waldegrave, then at the Department of the Environment, stated that "the NCC will be commencing their consultations on the SPA in September". In fact, the NCC started consultations with the owners and occupiers of the site on 1 November 1985 with a deadline for responses of 28 February 1986. The DoE was advised on 9 May 1986 by the NCC that they had completed these consultations, necessary prior to the formal notification of the site under both the Birds Directive and as a RAMSAR site. The NCC submission was that the site clearly satisfied the criteria for notification under both international treaties. Since that time there has been no action by Government to notify the site as an SPA as had been originally requested by the Commission themselves. This delay was 'justified' by the Scottish Office on 9 June 1987:
"In view of the discussions taking place between the Government and the European Commission, it was considered inappropriate to classify the site at that stage. It is hoped however, to reach a final decision on classification shortly. In the meantime the site has been fully protected by its status as a SSSI.... "

This response indicates that the Government have not even decided yet whether or not they intend to notify the site as an SPA. Given the pre-eminant importance of this site is surprising. It is also of interest to note that the Government regard the site as having been "fully protected" as an SSSI!!

The current situation is that there has still been no decision as to the future of the site as a specil protection area. Such a position is logically inconsistent as Lord Melchett has recently pointed out:

> "The Government's position has been that even if the proposed peat cutting had gone ahead, the nature conservation interest of the site would not have been damaged. I have always believed this to be wrong, but the Government have proceeded in making these allegations, both nationally and at numerous international meetings when Duich Moss has been discussed. If if is really believed that the nature, conservation interest of he site would not be damaged by the proposed pet cutting, why has the Government not gone ahead with designating the site as an SPA, and under the RAMSAR Convention ?"

Where do we stand now?

There has been a notable lack of publicity from the Scottish Office regarding the recent developments at Eilean na Nuice Dubh. Perhaps this is not surprising, given that they have been forced into a humiliating climb-down by the European Commission. However, this means that the current state of the case is not well known.

To summarise: SMD have now accepted that the Castlehill peat is of adequate quality for their use, and that they will use this supply for their long term requirments. The precise details of the agreement to use Castlehill and forego Duich Moss peat is still under negotiation between NCC and the Forestry Commission (who own Castehill). This still needs to be legally finalised.

Following from this, the Scottish Office still has to formally rescind the planning consent which gives SMD the right to cut peat from the SSSI at Duich Moss.

Restoration of the damage done already to the site needs completion. This invloves both restoring the excavated road into the site, and proper damming of ditches with an adequate number of dams. This work is urgently required and needs to be properly supervised by the NCC.

The Government has yet to even make a decision on whether the site is to be notified as a SPA, even though all the necessary paper work was completed by the NCC over a year ago. Resolution of the international status of the site is thus a clear imperative.

It is cheering to think we are so close to the final protection of this important site. That it is so nearly all over is a tribute to the energy and dedication of many conservationists, both on Islay and elsewhere, who have tried to prevent a great injustice being commited. We hope that next year we can report the final conclusion of this wholly unnecessary saga.

IRISH PEATLAND CONSERVATION

Greenland Whitefronts and Irish bogs are inextricably linked, both culturally and ecologically. Fortunately there is now a growing awareness of the desperate urgency to conserve the last few intact examples of some Irish peatlands before they are finally destroyed by drainage, domestic cutting, peat extraction, agriculture or forestry.

David Bellamy has recently written an absorbing account of Irish bogs, with particular emphasis on their evolution and vegetation history (Bellamy 1987: Bellamy's Ireland: the Wild Boglands. Croom Helm, £9.95). The photographs, by Heather Angel and Richard Mills, are both attractive and informative. After David Bellamy's personal involvement with Greenland Whitefront conservation on Islay, it is interesting to see the geese featuring throughout the book, and considerable attention is given to the birds, especially in the list of sites recommended for urgent protection. The book will undoubtedly raise awareness of the crisis currently facing Irish bogs and is to be strongly recommended to anyone with an interest in Ireland, bogs or geese.

The Irish Peatland Conservation Council (IPCC) has been raising funds for the direct purchase of threatened peatlands as the only means of ensuring their long-term survival. During the year they have managed to complete the purchase of Scragh Bog, Co. Westmeath which has been paid for by the Dutch Foundation for the Conservation of Irish Bogs. The site is now the property of the IPCC who will hold it in trust until the Irish Government agree to manage the site as a National Nature Reserve.

The IPCC hope soon to purchase a section of mountain blanket bog in the Wicklow Mountains. Peatlands in this area are threatened by private and commercial peat cutting, and these easterly blanket bogs provide an ideal location for education outings from the main centres of population. The IPCC have also been undertaking a range of activities in Ireland to raise public awareness of peatland conservation.

For anyone interested in the important work being undertaken by this small but energetic organisation, they can be contacted through their Treasurer: Brian Madden, IPCC, 307 Redford Park, Greystones, Co. Wicklow, Ireland.

GREENLAND WHITEFRONTS IN KINTYRE IN 1986/87

Sue Bignal

Two of the largest flocks of Greenland Whitefronts in Scotland away from Islay occur on Kintyre; at Rhunahaorine and Machrihanish. These flocks have probably increased in size in recent years, but reliable counts have been restricted to autumn and spring monitoring with little or no information from other times of the winter. Even those counts that have been done should be treated with caution as both sites are difficult to count with extensive area of 'dead ground' when scanned from roads and tracks, and flocks occasionally fragment to feed in other areas.

In order to obtain more detailed information on the habitat use and distribution of the geese, the NCC financed a survey during the winter of 1986/87, specifying one area count in each location per month (to coincide with Irish count dates), with also a roost count at Tangy Loch and Lussa Lochs.

To obtain information on the roosting behaviour of the geese in Kintyre would require a separate project ideally incorporating several observers counting different roost sites simultaneously. The counts carried out in 1986/87 added little information to what had already been collected in previous years (Rhead & Hopkins unpublished report to GWGS).

An important requirement for systematic monitoring is a reliable census procedure. Time was spent at both sites deriving a route that would cover all the potential feeding areas, which was both efficient to cover, and minimised risks of under- or over-counting geese. These new census routes have been outlined in the report to NCC and will hopefully be followed on future counts to ensure comparability of data.

Rhunahaorine

From November to March peak monthly counts were consistantly between 700-770, except for a lower count of 570 in March. The March count for Rhunahaorine was co-ordinated with a count at Glenacardoch Point giving a figure of 825 geese from north Kintyre. It thus appears that three areas seem favoured: Killean fields; fields below Dalmore farm and fields at Lenaig/Balure. The importance of rough grounds was under-estimated in the monitoring because of difficulty in actually counting the geese in some rushy fields. There are many goose droppings in these fields and past and recent observations point to the importance of certain rough fields as roosting areas.

The number of Greenland White-fronted Geese recorded on the six monthly counts remained relatively constant, although some movement between Rhunahaorine and other areas is suspected by the appearance of 'odd' geese with the Whitefronts. For example, a Canada Goose in March may have arrived in a small party of White-fronted Geese from elsewhere. White-fronted Geese were seen flying from the south (maybe from Glenacardoch Point) to Tayinloan and birds were seen flying to Gigha. On 22 January only 233 Greenland White-fronted Geese were counted in the census area, it is not known where most of the geese were.

Machrihanish

Since geese are both shot at and scared in this area it is difficult to assess whether fields most regularly used are favoured for feeding or as refuges - perhaps a combination of both. However the main feeding areas are predominantly low level agricultural land. From November - April numbers were between 653 and 716 together with 550 and 640 Greylags (January-April).

The area behind Drumlemble school and between the farms of Ballygreggan and Chiskan, appears to be the most favoured feeding area together with ground below Fallside and Bruntholme Farms. The only field of rough ground in the census area near east Chiskan was ploughed in April 1987; prior to this the vegetation was dominated by rank grasses and rushes and consequently was much used by the Greenland White-fronted Geese.

The Greenland White-fronted Goose numbers stayed relatively constant throughout the season and there seemed to be no major movements of birds in or out of the Machrihanish area.

Local movements occur when the geese are scared away from more favoured areas, for instance an area to the north near to Drum Farm includes a flooded field and is a regularly favoured site providing alternative feeding and roosting opportunities; alternatively the geese may fly to Lussa Loch when disturbance levels are high.

Isle of Gigha

Gigha was not visited although 10 Whitefronts were seen flying from Killean to Gigha on 11 January. There are reports of small numbers of Whitefronts on Gigha and there seems to be a small amount of flux to and from the island.

Loch nan Gad

In recent years Greenland White-fronted Geese have been recorded feeding in the fields above the loch and also roosting there. During both December and March, 80 geese were seen on or near the loch, although it is thought that these were birds that spent the remainder of the winter at Rhunahaorine.

Glenacardoch Point

In December 1984 the BTO/Earthwatch Shorebirds survey team found a total of 68 geese here, and this area was thus searched more thoroughly. On 15 March 1987, 54 Whitefronts were found feeding on the lower fields at Rosehill Farm, with 97 geese in this area on 1 April. Further counts are needed to determine the use of the area, although it seems likely that the geese using the Point come from the Rhunahaorine flocks at various times of the winter, and do not represent a discrete wintering flock.

I would like to thank Rev. & Mrs. A Duncan-Jones, Pat Batty, Marion Hughes, Chris Ford, Fraser Taylor, Economic Forestry Group, Forestry Commission and the Nature Conservancy Council for help with the survey.

WINTERING SITES INVENTORY

The census surveys of the last four winters have generated a large amount of very valuable information. The count data has been summarised in these annual census reports and is now being collated, together with data from Ireland, into a comprehensive review of numerical trends in the whole Greenland White-fronted Goose population. However, a large amount of information has also been collected on the sites used by the geese, the habitats present, site protection, disturbance and other factors. This has always been available to conservation bodies as and when needed, yet until recently it has not been collated in any standard format.

Work proceeded during the year on a major volume entitled "A preliminary inventory of Greenland White-fronted Goose wintering sites in Britain". This will be published by the Nature Conservancy Council in their Research and Survey series of reports, hopefully early in 1988. Each wintering site will be described in a standard format, with accompanying maps. As much as anything, it is hoped that this exercise will highlight those sites on which information is currently lacking. It will be intended as a working handbook, and we hope that it becomes rapidly out of date with the vigorous burst of new site information that it generates!

AUTUMN IN ICELAND: 3,000 Km of potholes

N. Easterbee, J.M. Stroud and D.A.Stroud

Following the success of the spring 1986 trip to Iceland described by Ian Francis in last year's census report (GWGS 1986a; Francis & Fox 1987), we decided to look for geese on their return passage through Iceland in October. The aim was to attempt a census of all the areas identified in the spring, and thus count the total population. At the same time we hoped to age considerable numbers of birds and assess breeding success of the geese before they reached their wintering grounds. Finally, we intended to look for as many Darvic marked geese as possible, since large numbers had been successfully checked in the spring with many collars and rings being read.

We arrived in Reykjavik on 27 September and then travelled east along the south coast as far as Hof. From there, we slowly worked west checking all known or likely goose areas along the south coast over the following four days. The largest numbers were in the Landeyjar area - extensive, flat areas of farmland, large areas of which have been reclaimed from fen-like peatlands. There are still considerable areas with traditional grazing marsh management, with 'meadows' of the sedge Carex lyngbyei.

Figure 3 Important staging area for Greenland White-fronted Geese near Hveragerdi, Olfusa, southern Iceland. Note dark lava flows in middle distance. (I Francis)

In Landeyjar we found a total of 570 Greenland White-fronted Geese and saw several neck collared birds, although in contrast to the spring we were unable to get close enough to read any. In part this was probably due to the obvious shooting activity near many of the major haunts, which undoubtedly made the birds more cautious than at other times.

After searching these areas, we moved north and spent a week on the west coast, particularly the Myrar - Snaefellsnes area to the east and north of Borganes. Here, we were more successful and found a total of 1,785 birds including one peatland roost which held at least 450 geese. However, like the southern area we were unable to ready any Darvic rings or collars, although several were undoubtedly present.

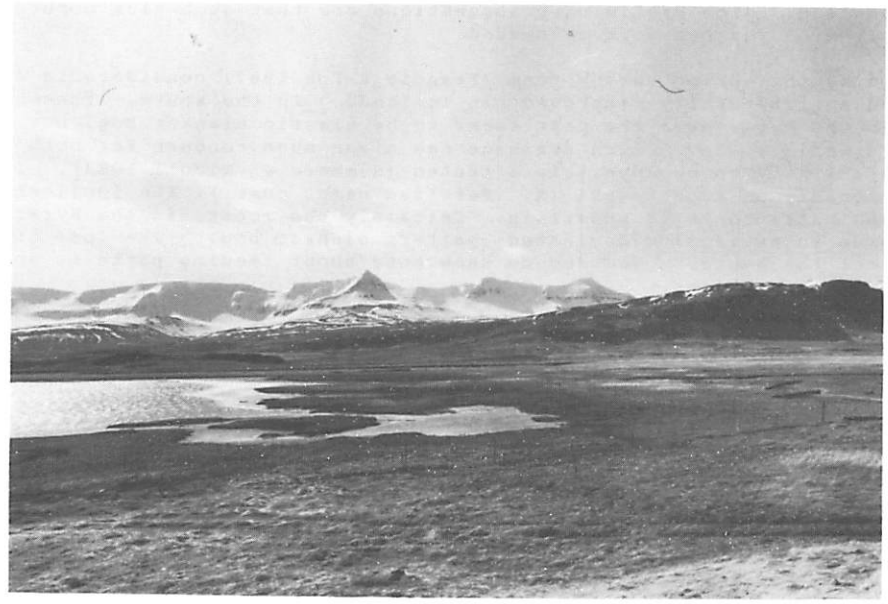


Figure 4 Small lake and associated wetlands used by Whitefronts. Hvanneyri, Western Iceland, May 1986. (I Francis)

This was a clear contrast between the results of the spring and autumn censuses, which covered the same areas with essentially similar search effort:

	SPRING	AUTUMN
Southern staging area Olfusa - Landeyjar:	2,027 (58.5%)	570 (24.2%)
Northern staging area Myrar - Snaefellsnes:	1,438 (41.5%)	1,785 (75.8%)
TOTAL:	3,465	2,355

It seems likely that different relative use of the two areas reflects differing arrival directions. The Landeyjar area is the first landfall, or near to it, for birds arriving in the spring from the south. However, the Myrar area is the first landfall for birds arriving from Greenland in the autumn. It seems reasonable to suppose that birds stop for longer at their first landfall. This is undoubtedly simplistic without knowledge of turn-over rates, between site movement and other detailed information. Better understanding will have to await further studies.

We were able to age about a quarter of all the geese we saw, and of a total of 566, 17.8% were juveniles with a mean brood size of 2.66 (n=38; Table 2). We were interested to see how this compared with figures from the winter range. At the time we thought the figure was likely to slightly over-estimate 'true' productivity. This was because the easiest geese to age tended to be in small flocks or groups, and these tended to be dominated by family parties. Thus, large flocks of non-breeders were probably under-recorded. This indeed proved to be the case with the proportion of young higher than recorded either at Islay or Wexford. Had we had more time to concentrate just on ageing, this problem could have been surmounted. Similar over-estimation of young occured when Percival et al. (1983) found 25% young out of 460 Greenland Whitefronts in Iceland in 1983. Subsequent surveys that year found only 9.9% young on Islay and 12.3% at Wexford.

Why did we find so few geese when a large proportion of the whole population should have been in Iceland? It is possible, but unlikely, that there were major numbers in areas we did not check. It was Dr. Gardarsson's opinion that most birds had not yet arrived in Iceland, and that the main influx does not occur until later in October, with significant number still be present until at least the end of October/beginning of November. It is difficult to relate this apparently usual pattern in Iceland, to the general arrival of large numbers on Islay about 14 October, and the arrival at Stranraer of significant numbers on 2 October in 1987.

It would seem that autumn staging in Iceland is not as synchronised as previously thought. It is likely that at least some birds arrive feed and depart for the British Isles before others have even arrived from Greenland. The preliminary suggestions are that such flux occurs for a large part of October. Obviously much further work is needed.

As had been noted by the spring survey team (Francis & Fox 1987) considerable areas of peatland have been drained and agriculturally 'improved' in Iceland. In the south, these are probably fen-type peats, whereas in the Myrar area the peat seems to be classic blanket bog, now known to be extremely restricted on a world scale. Such drainage has given much concern for both breeding waders and other wildlife are likely to be adversely affected (Summers & Nicoll 1983). In some areas the loss of wetlands is probably as much as 60% (A. Petersen pers. comm.). The implications of this peatland loss for Greenland Whitefronts is uncertain. Certainly the roosts in the Myrar area seemed to be on typical Eriophorum angustifolium-dominated pattern blanket bog. The loss of these areas would undoubtedly affect the geese. We need to know more about feeding patterns and habitat preferences before making wider predictions.

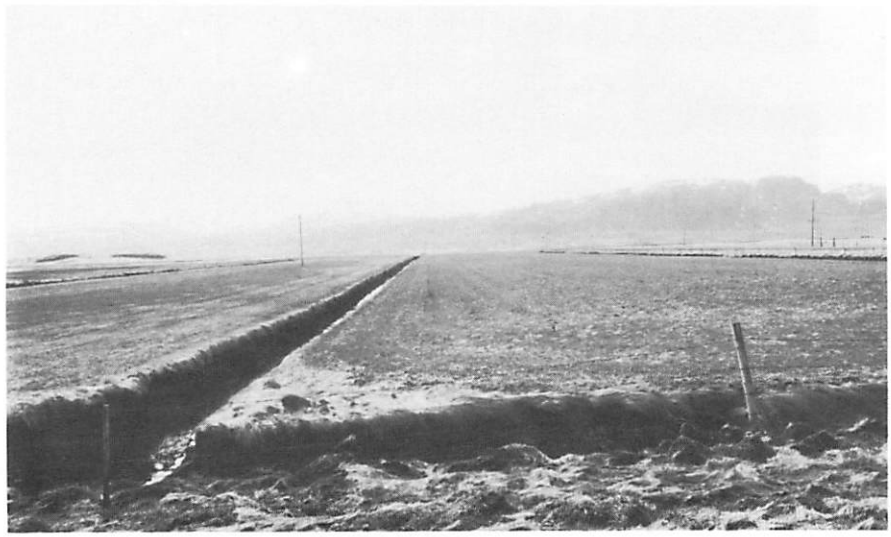


Figure 5 Typical reseeded hay meadow near Hvanneyri used by staging Greenland White-fronted Geese in Western Iceland. (I Francis)

What is certain however, is that natural peatlands and especially blanket bog, area a very restricted habitat in Iceland, and that such areas currently receive minimal protection. Protection of remaining intact peatlands must be an important conservation priority in Iceland.

Darvic Ringed Geese and Resightings in 1986/87

A large number of darvic ringed geese were seen during the winter and details of these sightings are given seperately. The numbers and origins of sighted birds can be summarised as follows.

Summary table of ringed Greenland White-fronted Geese resighted in 1986/87

	1979 ringed	1984 ringed
Total birds seen in 1986/87	8	17
Total birds dead in 1986/87	1	2
Total of 'first sightings' seen	0	3
Total unread rings	(3)	(2)
Total recorded to date	69/96 = 72%	49/88 = 56%

Three birds were recorded dead during the year. One 1979 ringed bird (A65) was shot on autumn passage in south Iceland, whilst a 1984 ringed goose (T25) was illegally shot in Co. Ireland. A further 1984 bird (T07) was found dead, probably because it had hit power-lines.

Two birds ringed in Greenland in 1984 were seen for the first time; K74 wintering at Rhunahaorine, and T07 found dead at Stranraer. Interesting movements were shown by T25, seen on the Isle of Coll during the 1984/85 and shot in Co. Cork. Most of the 1979 ringed birds seen were 'old faithfuls' - regular on Islay for the last eight years.

During the winter, 96 Greenland White-fronted Geese were trapped at Wexford in four catches during six week period from the end of October to mid-December (Norriss & Wilson 1987). A further 13 geese were caught in the Irish Midlands, the first catch away from Wexford. Of the several hundred geese marked over the last four winters, 23 were identified in Britain during 1986/87. These were on Islay, at Machrihanish, Loch Ken and Isle of Coll. A further probable six birds were seen but not specifically identified at Machrihanish and Stranraer. Of the 23 sightings, four had been seen in Britain during 1985/86.

SIGHTINGS OF DARVIC RINGED GEESE IN BRITAIN IN 1986/87

All sightings vv unless otherwise stated
UPD = Unpaired
UNR = Paired to unringed goose
\+ = Associating but not paired

Geese neck-collared at Wexford and seen in Britain in 1986/87

Darvic	Site	Date	Mate	Brood	Flock	Observer
3AA	Neriby, Islay	05/12/86		0	70	SP
3AA	Neriby, Islay	07/12/86			120	SP
3AA	Mulindry, Islay	23/01/87			160	SP
3AA	Neriby, Islay	28/02/87		0	70	SP
7JE	Carn, Islay	01/02/87	UNR+ K40	0	120	SB
7JE	Port Charlotte, Islay	23/02/87	UPD	0	150	SP
OJJ	Mulindry, Islay	31/10/86	UPD	0	40	SP
OJJ	Cluanach, Islay	18/02/87				SP
3JK	Corrary Hill, Islay	24/10/86	6JK	0	200	SP
6JK	Corrary Hill, Islay	24/10/86	3JK	0	200	SP
1JM	Ardnave, Islay	14/11/86	UPD	0	70	SP
1JM	Ardnave, Islay	05/12/86	UNR	0	7	SP
5JR	Ballygrant, Islay	12/02/87			80	SB
8JR	Finlaggan, Islay	29/11/86				SB
6KJ	Rockside, Islay	18/10/86	UNR	0	220	SP
6KJ	Wester Ellister, Islay	30/01/87	UNR	0	190	SP
6KJ	Easter Ellister, Islay	06/02/87			200	SP
4KK	Machrihanish, Kintyre	04/02/87			106	SB
4KK	Machrihanish, Kintyre	01/04/87	+ unread collar			SB
4KK	Machrihanish, Kintyre	05/04/87	+?OKJ			SB
6KP	Sanaig, Islay	23/11/86	UPD	0	11	SP
6KP	Coull, Islay	03/01/87			280	SP
3KR	Redhouses, Islay	23/10/86	UPD	0	80	SP
3KR	Uisgeantsuidhe, Islay	28/01/87	UPD	0	40	SP
OKT	Gruinart East, Islay	08/10/86	UNR	0	50	SP
OKT	Skerrols, Islay	15/10/86			210	SP
OKT	Skerrols, Islay	17/10/86			250	SP
OKT	Skerrols, Islay	21/10/86			750	SP
OKT	Skerrols, Islay	27/10/86			200	SP
OKT	Gruinart East, Islay	19/11/86			400	SP
3KT	Loch Ken	05/11/86				RH
3KT	Loch Ken	26/12/86				AT
3KT	Loch Ken	20/01/87				AT
3KT	Loch Ken	03/02/87				AT
3KT	Loch Ken	06/02/87				AT
3KT	Loch Ken	08/02/87				AT
3KT	Loch Ken	13/02/87				AT
3KT	Loch Ken	22/02/87				IB
3KT	Mains of Duchrae, L.Ken	20/03/87	+4KT,4KY		350	AT
3KT	Cogarth, Loch Ken	02/04/87	+4KT,4KY		106	AT
3KT	Mains of Duchrae, L.Ken	12/04/87	+4KT,4KY		288	AT
3KT	Mains of Duchrae, L.Ken	17/04/87	+4KT,4KY		212	AT
4KT	Loch Ken	05/11/86				RH
4KT	Loch Ken	26/12/86				AT
4KT	Loch Ken	20/01/87				AT
4KT	Loch Ken	08/02/87				AT
4KT	Loch Ken	13/02/87				AT
4KT	Loch Ken	22/02/87				AT
4KT	Mains of Duchrae, L.Ken	20/03/87	+3KT.4KY		350	AT
4KT	Cogarth, Loch Ken	02/04/87	+4KY,3KT		106	AT
4KT	Mains of Duchrae, L.Ken	12/04/87	+3KT,4KY		288	AT
4KT	Mains of Duchrae, L.Ken	17/04/87	+4KY,3KT		212	AT

Darvic	Site	Date	Mate	Brood	Flock	Observer
8KT	Redhouses, Islay	21/10/86		0	400	SP
4KY	Loch Ken	05/11/86				RH
4KY	Loch Ken	26/12/86				AT
4KY	Loch Ken	20/01/87				AT
4KY	Loch Ken	08/02/87				AT
4KY	Loch Ken	13/02/87				AT
4KY	Loch Ken	22/02/87				IB
4KY	Mains of Duchrae, L.Ken	20/03/87	+4KT,3KT		350	AT
4KY	Cogarth, Loch Ken	02/04/87	+4KT,3KT		106	AT
4KY	Mains of Duchrae, L.Ken	12/04/87	+4KT,3KT		288	AT
4KY	Mains of Duchrae, L.Ken	17/04/87	+4KT,3KT		212	AT
5RJ	Leorin, Islay	10/11/86			108	EMB/NE
5RJ	Leorin, Islay	25/11/86	UPD	0	220	SP
5RJ	Leorin, Islay	13/12/86				SB/EMB
5RJ	Laphroaig, Islay	31/01/87			30	SP
7RM	Sunderland, Islay	05/11/86	UNR	0	243	SP
7RM	Sunderland, Islay	09/11/86	UNR male			NE/EMB
7RM	Coull, Islay	05/12/86	UPD	0	130	SP
7RM	Kilchoman, Islay	14/12/86				NE/EMB
7RM	Coull, ,Islay	31/01/87			78	SP
7RM	Sunderland, Islay	31/01/87				SB/EMB
7RM	Coull, Islay	03/02/87			120	SP
7RM	Rockside, Islay	03/03/87	+1TA,2TA,4TA			GJ
7RM	Coull, Islay	19/02/87			80	SP
7RT	Coll	??/04/87				MG
1TA	Ballinaby, Islay	10/11/86	2TA, 4TA			EMB/NE
1TA	Braigo, Islay	16/01/87		0	30	SP
1TA	Rockside, Islay	03/02/87	+2TA,4TA,7RM			GJ
1TA	Kilchiaran, Islay	12/02/87		0	250	SP
1TA	Kilchiaran, Islay	12/02/87	+4TA,2TA			SB
1TA	Coull, Islay	19/02/87		0	40	SP
1TA	Rockside, Islay	20/02/87		0	200	SP
1TA	Coull, Islay	24/02/87		0	70	SP
1TA	Coull, Islay	27/02/87		0	170	SP
2TA	Rockside, Islay	18/10/86	4TA	0	220	SP
2TA	Ballinaby, Islay	10/11/86	1TA, 4TA			EMB/NE
2TA	Braigo, Islay	16/01/87		0	30	SP
2TA	Rockside, Islay	03/02/87	+1TA,4TA,7RM			GJ
2TA	Kilchiaran, Islay	12/02/87		0	250	SP
2TA	Kilchiaran, Islay	12/02/87	+1TA,4TA			SB
2TA	Coull, Islay	19/02/87		0	40	SP
2TA	Rockside, Islay	20/02/87		0	200	SP
2TA	Coull, Islay	24/02/87		0	70	SP
2TA	Coull, Islay	27/02/87		0	170	SP
4TA	Rockside, Islay	18/10/86	2TA	0	220	SP
4TA	Ballinaby, Islay	10/11/86	+1TA,2TA			EMB/NE
4TA	Braigo,Islay	16/01/87		0	30	SP
4TA	Rockside, Islay	03/02/87	+1TA,2TA,7RM			GJ
4TA	Kilchiaran, Islay	12/02/87		0	250	SP
4TA	Coull, Islay	19/02/87		0	40	SP
4TA	Rockside, Islay	20/02/87		0	200	SP
4TA	Coull, Islay	24/02/87		0	70	SP
4TA	Coull, Islay	27/02/87		0	170	SP

Seen but not read:

1 Orange	West Freugh, Stranraer	29/11/86				BD
4 Orange	West Freugh, Stranraer	22/02/87				JR
3 Orange Collars	South Uist	26/04/87	flew north		43	DJ
1 White Collar	Machrihanish	01/01/86	(sic)			AGG
2 Orange Collars	Machrihanish	26/11/86				SB
3 Orange Collars	Machrihanish	19/12/86	2prd+1			SB
1 Orange Collar	Machrihanish	21/12/86				SB
2 Orange Collars	Machrihanish	24/01/87				SB
2 Orange Collars	Machrihanish	28/01/87				SB
1 Orange Collar	Machrihanish	10/02/87				SB
1 Orange Collar	Machrihanish	14/03/87	= ?OKJ			SB
1 Orange Collar	Machrihanish	01/04/87	+4KK			SB

1 Orange Collar	Machrihanish	05/04/87	= ?OKJ with 4KK			SB
5 Orange Collars	Loch Ken	21/10/86				RH
3 Orange Collars	Loch Ken	24/10/86				RH
2+Orange Collars	Loch Ken	25/10/86				RH
3 Orange Collars	Loch Ken	04/11/86				RH
3 Orange Collars	M of D, Loch Ken	02/01/87				DAS
3 Orange Collars	Cogarth, Loch Ken	06/01/87				NR
3 Orange Collars	M of D, Loch Ken	07/01/87				NR
3 Orange Collars	M of D, Loch Ken	23/01/87				NR
3 Orange Collars	Loch Ken	14/02/87				AT

Geese leg-ringed in Greenland in 1979 and resighted 1986/87

Darvic	Site	Date	Mate	Brood	Flock	Observer
A14	Kynagarry, Islay	11/11/86			260	SP
A14	Kynagarry, Islay	14/12/86		0	130	SP
A14	Avenvogie Barn, Islay	21/04/87	+3 Darvics		35	JM
A19	Kynagarry, Islay	14/12/86			130	SP
A19	Avenvogie Barn, Islay	21/04/87	+3 Darvics		35	JM
A24	Kynagarry, Islay	14/12/86		0	130	SP
A24	Avenvogie, Islay					SB
A24	Kynagarry, Islay	03/02/87	+5 other rings		23	SB
A26	Kynagarry, Islay	14/12/86		0	130	SP
A26	Kynagarry, Islay	03/02/87	+5 other rings		23	SB
A26	Avenvogie Barn, Islay	21/04/87	+3 Darvics		35	JM
A38	Kileannan, Islay	05/12/86	UNR	3	100	SP
A56	Sunderland, Islay	05/11/86	UNR	0	243	SP
A56	Sunderland, Islay	31/01/87			100	SP
A56	Sunderland, Islay	31/01/87				SB
A56	Sunderland, Islay	04/02/87			30	SP
A56	Sunderland, Islay	12/02/87			90	SP
A56	Sunderland, Islay	19/02/87			100	SP
A60	Home Farm, Islay	31/10/86	UNR	5	250	SP
A60	Home Farm, Islay	21/10/87	UNR	4	43	SP
A65	Thykkvibaer, Rang. Iceland	20/09/86	- Shot -			
A66	Kynagarry, Islay	03/02/87	+5 other rings		23	SB
A66	Avenvogie Barn, Islay	21/04/87	+3 Darvics		35	JM
Seen but not read:						
1 Darvic right	Machrihanish, Kintyre	26/11/86	UNR	3		SB
1 Darvic right	Machrihanish, Kintyre	19/12/86				SB
1 Darvic right	Machrihanish, Kintyre	15/01/87				SB
1 Darvic right	Machrihanish, Kintyre	24/01/87	UNR	3		SB
1 Darvic right	Machrihanish, Kintyre	15/03/87		4		SB
1 Darvic right	Grobolls, Islay	08/11/86				EMB/NE
1 Darvic right	Broubster, Caithness	29/12/86	Female Bird			SL

Geese leg-ringed in Greenland in 1984 and resighted 1986/87

Darvic	Site	Date	Mate	Brood	Flock	Observer
KO2	Eorrabus, Islay	10/12/86	KO3	0	150	SP
KO2	Eorrabus, Islay	11/12/87	KO3	0	90	SP
KO3	Eorrabus, Islay	10/12/86	KO2	0	150	SP
KO3	Eorrabus, Islay	11/02/87	KO2	0	90	SP
K16	Easter Ellister, Islay	06/02/87		0	200	SP
K16	Wester Ellister, Islay	24/02/87	UPD	0	70	SP
K20	Kiells, Islay	10/12/86	UNR	0	190	SP
K23	Leorin, Islay	10/02/87	K41	0	350	SP
K26	Coultorsay, Islay	01/11/86	UNR	0	140	SP
K26	Coultorsay, Islay	13/02/87				GJ
K26	Coultorsay, Islay	23/02/87			70	SP
K34	Leorin, Islay	10/02/87	UNR	0	350	SP

Darvic	Site	Date	Mate	Brood	Flock	Observer
K40	Carn, Islay	01/02/87	UNR + 7JE		120	SB
K41	Leorin, Islay	10/02/87	K23	0	350	SP
K44	Knocklearach, Islay	31/01/87			12	SB
K44	Knocklearach, Islay	12/02/87	UNR	5		SB
K44	Knocklearach, Islay	27/02/87	UNR	5	180	SP
K54	Eorrabus, Islay	11/02/87	UPD	0	90	SP
K57	Finlaggan, Islay	21/01/87	K60	0	127	SP
K60	Finlaggan, Islay	21/01/87	K57	0	127	SP
K74	Rhunahaorine, Kintyre	11/01/87	UNR		113	SB
K74	Rhunahaorine, Kintyre	18/01/87				SB
K74	Rhunahaorine, Kintyre	04/04/87			44	DAS
T01	Bowmore Allotments, Islay	17/11/86	UNR	0	100	SP
T01	Bowmore Allotments, Islay	05/12/86			30	SP
T01	Port Charlotte, Islay	23/02/87		0	150	SP
T07	Stranraer, Galloway	25/11/86	Found dead, prob. hit power-lines			
T25	Butterant, Co. Cork	00/01/86 sic	Shot			
Seen but not read:						
	Broubster, Caithness	29/12/86				SL
	Loch Ken, Galloway	18/02/87				RH

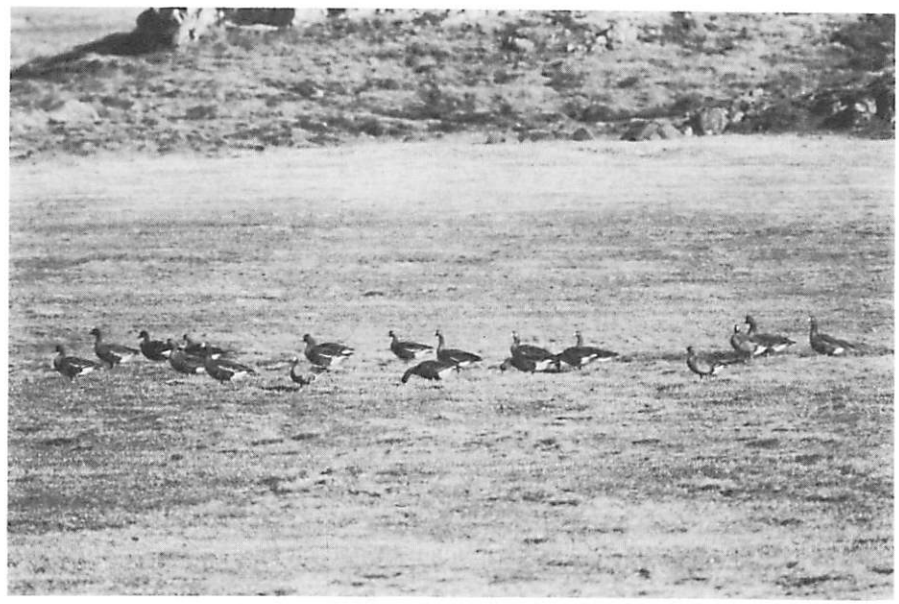


Figure 6 Greenland White-fronts, Myrar, Western Iceland, May 1986. (I Francis)

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TABLE 1. SUMMARY OF GREENLAND WHITE-FRONTED GOOSE COUNTS 1984/85 - 1986/87.

	Autumn 1984	Spring 1985	Autumn 1985	Spring 1986	Autumn 1986	Spring 1987
NORTH-EAST SCOTLAND	376	518	136	184	271	520
NORTH-WEST SCOTLAND	176	79	192	402	214	203
NORTH ARGYLL	1304	1110	1448	1032	1262	977
SOUTH ARGYLL: ISLAY	5256	4715	6332	5669	6126	6486
: OTHERS	1659	1761	2095	1900	1909	2094
GALLOWAY	633	713	848	737	1045	1020
ENGLAND	10	13	1	0	3	0
WALES	76	88	93	98	81	95
BRITISH TOTAL	9490	8997	11145	10022	10911	11395

TABLE 2. REVISED COUNTS FOR 1985/86 CENSUS. PEAK MONTHLY COUNTS.

	Sept	Oct	Nov 1-17	Nov 18-30	Dec	Jan	Feb	Mar	April	April
INVERNESS				17	c40?	5				
COLL: Several Sites		102		548		186	96	239		396
LOCH SHIEL				26	21	0	28	10	14	
BUTE		65	145		50				50	
LOCH LOMOND : Endrick Mouth		115	190		300+	50	200	200	200+	
LOCH KEN: Parton/Mains of Duchrae	25	112	c250	275	170	297	c150	234	234	334
DYFED: Dyfi Estuary		83	93	93	108	107	108	109	98	98
LANCASHIRE		1			11	1				

TABLE 3. PEAK MONTHLY COUNTS AT GREENLAND WHITE-FRONTED GOOSE WINTERING SITES IN BRITAIN: 1986/87

Site	Sept	Oct	Nov 1-19	Nov 20-30	Dec	Jan	Feb	Mar 1-27	Mar 28 -5 Apr	6 Apr	May
NORTH-EAST SCOTLAND											
ORKNEY:											
Tankerness/Holm											
Loons/L. of Ibister		68+	62						79		
Stronsay				6					52		
CAITHNESS:											
Westfield area		150			165	150+		163	80+		
Loch Heilen area									144		
Loch Wester					29						
CROMARTY:											
Loch Eye				0		9			(9)		
Morrich area			0						(0)		
Dornoch Firth			9						(0)		
NORTH-WEST SCOTLAND											
SUTHERLAND:											
L.Syre/L.na Moine				(0)	0				(0)		
LEWIS:											
Barvas/Shawbost				24	21	15	6	6	6		
BENBECULA:											
Nunton/Griminish				(0)					(0)		
SOUTH UIST:											
Loch Hallan area				22	31				31		
Loch Bee area				54	51				(51)		
SKYE:											
Loch Snizort		35-40		30		34		0	31		
Broadford/Paqbay area				(24)		24			30	c30	
Kyleakin				(0)					8		
Ascrib Islands				(0)					(0)	20	
GAIRLOCH:											
Longa Island/Red Point				(0)	0				(0)		
Loch Squod Mires					14				8		
ROSS:											
Coigach Pensinsula			3								
MUCK:				(46)		46			46		
EIGG:				(0)					(0)		
NORTH ARGYLL											
TIREE: Several Sites				(760)		760				448	
COLL: Several Sites		22		330	303	171	405	381		275	
Gunna						>15					
LISMORE IS./											
BENDERLOCH		40		95	60		128		170		
LOCH SHIEL		0	0	0	17	35	18		20		
MULL			56		73	0	81	59			
			21		28	17	5	5			

Site	Sept	Oct	Nov 1-19	Nov 20-30	Dec	Jan	Feb	Mar 1-27	Mar 28 5 Apr	>6 Apr	May
SOUTH ARGYLL											
COLONSAY/ORANSAY			110	97				128			
JURA: Lowlandmans Bay				(84)				84			
L. a'Chnuic Bhric				(24)				24			
ISLAY: total count			3981	6126	6274	4367	5723	5881	6486		50
DANNA	4			32		123	120	136			
MOINE MHOR			0	0	0	0					
CLACHAN					80			80*			
GIGHA						10*					
RHUNAHAORINE AREA		181	744	751	758	707	572	771	733		
GLENACARDOCH POINT								54	97*		
MACHRIHANISH AREA		500	515	653	687	654	618	675	716		
BUTE				(145)					(50)		
LOCH LOMOND: End.Mouth		193		c225					c230		
STRATH KELVIN: Gadloch			1								
GALLOWAY											
STRANRAER		250+		600					740		
BLANDOCH VALLEY				(43)					(43)		
CREE VALLEY				(0)					(0)		
LOCH KEN:											
Parton/Mains of Duchrae		c300	300	290	300	295	248	350	230	288	
AYRSHIRE: Several Sites				(0)					(0)		
ENGLAND											
LANCASHIRE: Martin Mere			2								
Other		3	3	3				1			
CUMBRIA: South Walney Is.		1									
WALES											
CLWYD: Anglesey				(0)					(0)		
DYFED: Dyfi Estuary		75	84		81	95	85	95	95	85	
POWYS: Bryn-Du				(0)					(0)		

NOTES:

*These areas are thought to be occasionally used by sub-flocks of the Rhunahorine/Machinhanish flocks and are not included in the totals for there sites in autumn and spring. These census counts included checks for birds in these areas but none were found. Totals given are peak monthly counts and those counts used in the derivation of spring and autumn census totals are underlined. If counts during the census period were either missed or obviously incomplete, the closest accurate count to the census period was used. Estimates are bracketed. Of the autumn total, 1126 (10.3%) was estimated whilst only 1.3% (153) was estimated for the spring total.

TABLE 4. SUMMARY OF BRITISH PRODUCTIVITY OF BRITISH WINTERING GREENLAND WHITE-FRONTS IN 1986.

	TOTAL AGED	NUMBER OF YOUNG	% OF YOUNG	NUMBER OF BROODS	MEAN BROOD SIZE	FREQUENCY OF BROODS 1	2	3	4	5	6	7
ISLAY	3190	322	10.1%	112	2.88	27	21	32	15	7	5	5
REST OF SCOTLAND	2164	256	11.8%	72	2.49	23	19	11	13	3	3	0
BRITAIN	5354	578	10.8%	184	2.74	50	40	43	28	10	8	5
ICELAND	566	101	17.8%	38	2.66	7	11	11	7	1	1	0

TABLE 5. AREA TOTALS FOR ISLAY GREENLAND WHITE-FRONTED GOOSE COUNTS: 1986/87. COUNTS CO-ORDINTED BY DR M.A. OGILVIE FOR NATURE CONSERVANCY COUNCIL AND REPRODUCED BY PERMISSION OF NCC.

	December 9	December 10	April 2	April 3
RHINNS*	397	695	2075	1641
GORM*	650	763	611	675
GRUINART*	834	683	50	70
KILMENY*	1708	1810	1726	1860
LAGGAN	685	608	397	740
GLEN	550	455	347	345
ARDTALLA	0	0	0	27
OA	1131	1260	828	1128
ISLAY TOTAL	5895	6274	6034	6486

*Slight changes were made to the boundaries of the island sub-divisions. Small parts of Gorm and Gruinart were transfered to Rhinns and Kilmeny respectively.

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