

## **Greenland White-fronted Geese – review of status, trends and management options**

**Note of Meeting at *Waterbirds Around the World* Global Flyway Conference  
Herriot Watt University, Edinburgh, Sunday 4 April 2004**  
*(note written by Ian Francis, with input from several participants)*

**Present:**

Ian Bainbridge (Scottish Executive, UK)  
Hugh Boyd (Canadian Wildlife Service, Canada)  
Tony Fox (NERI Denmark/Greenland White-fronted Goose Study)  
Ian Francis (RSPB Scotland/Greenland White-fronted Goose Study) - Chair  
Christian Glahder (NERI Denmark)  
Larry Griffin (Wildfowl & Wetlands Trust, UK)  
Gudmundur Gudmundsson (Icelandic Institute of Natural History, Iceland)  
Gill Hartley (Scottish Agricultural Science Agency, UK)  
Robin Hepworth (United Nations Environment Programme)  
Bert Lenten (AEWA Secretariat)  
Oscar Merne (National Parks and Wildlife Service, Ireland)  
Malcolm Ogilvie (UK)  
Eileen Rees (Wildfowl & Wetlands Trust, UK)  
David Stroud (JNCC UK/Greenland White-fronted Goose Study)  
Paul Walton (RSPB Scotland, UK)  
Gregor Watson (Environment & Heritage Service, Dept of Environment NI, UK)  
Phil Whitfield (Scottish Natural Heritage, UK)  
Andrew Williams (DEFRA, UK)  
John Wilson (National Parks and Wildlife Service, Ireland)

**cc.**

Sian Whitehead (Countryside Council for Wales, UK)  
Ian Enlander (Environment & Heritage Service, Dept of Environment NI, UK)  
Carsten Egevang (Greenland Institute of Natural Resources, Greenland)

The aim of the meeting was to discuss possible ways of tackling the current problems being experienced by the world population of Greenland White-fronted Geese. Discussion was quite brief due to pressure of time. Two documents were circulated prior to the meeting – these are attached again with the accompanying email for those who did not receive them<sup>1</sup>. The main action proposed prior to the meeting was to update and ensure the adoption of the International Flyway Management Plan, first drafted in 1992. Endorsement was sought for this.

**Comments made during the meeting:**

1. There was no dissent from the analysis in the supporting papers that the main influences on recent population trend lay in breeding and staging areas.

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<sup>1</sup> Attached here as Appendix

2. Discussions centered initially on the original flyway plan, and the reasons for its non-implementation. Several participants expressed support for the concept of reworking the plan, which would fit well with ongoing action under AEWA.
3. However, views were also expressed that unless the Greenlandic and Icelandic governments were signed up to the plan, it would be difficult to implement it. This had been the major difficulty with the first plan.
4. The issue of alternatives to the Flyway Plan was discussed, assuming that Greenland and Iceland did not sign up. Could there be bilateral agreements over certain key issues?
5. The development of the Light-bellied Brent Goose flyway plan under AEWA had proceeded and contact was being made with the Icelandic government but not Greenland.
6. The view was expressed that the Greenlandic government had too many priorities for a very small government resource, and cost implications were paramount. Several participants considered that Greenland would not participate for these reasons.
7. The view was expressed from Iceland that the government was also cautious of participation due to possible cost implications. It was also stated that in very recent years hunting bags had declined due to increased awareness amongst hunters. However, the goose population has also declined, so proportional effects may mean little effective change to this threat (see addendum below).
8. It was considered that within Scotland/UK, the JNCC and SNH should take the lead and make representations to DEFRA/Scottish Executive.
9. Views were expressed that action could be brought forward under the CAFF agreement, or through UNEP in relation to CBD commitments, to which all relevant governments are signatories.
10. The practical difficulties of dealing with goose management in Canada (or the US) were touched on, meaning that little action was feasible on Canada Goose wintering grounds.

**Conclusions and actions:**

1. It is most important to make appropriate contact at governmental level between UK/Ireland and Iceland. The aim of this would be to discuss flyway management issues, with the aim of Icelandic agreement to an updated flyway management plan.
2. Appropriate discussions would be held to facilitate contact at the appropriate level between Scottish Natural Heritage and the Icelandic Government.
3. It is also very important to make similar contacts with the Greenlandic government, and discussions with appropriate colleagues in Greenland will be held to develop this. Again, endorsement of the flyway plan is the initial objective.
4. Notwithstanding discussions in relation to the flyway management plan, contact should also be made with the Icelandic government in the first instance in relation to specific management issues. This could lead to the progression of bilateral initiatives to tackle the key issue of goose hunting in Iceland.

5. Bilateral initiatives in relation to goose management in Greenland could also be discussed.
6. Aerial survey work in West Greenland will be developed if possible, ideally this summer (2004). *Further note: funds have been granted by the Danish Environmental Protection Agency - aerial survey is likely to go ahead, but in 2005 (breeding/ post-moulting surveys).*
7. Other funding issues were not discussed due to lack of time.

### **Addendum**

These are the official statistics available to date, although the Icelandic Wildlife Management Institute web page does not seem to be accessible:

*Iceland Greenland White-fronted Goose hunting bag, courtesy Icelandic Wildlife Management Institute.*

<b>Year</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Reported bag	3237	2947	3185	3245	3309	3515	3685
% estimated autumn popn.	9,61	7,88	8,84	8,36	9,11	10,33	12,01

*(the latter is estimated by using the kill as a percentage of the total mid-winter population plus the kill, so is likely a slight overestimate, but this does not affect the trend).*

# The Greenland White-fronted Goose *Anser albifrons flavirostris*

## *Review of trends, status and management options*

### Background briefing document

1. The Greenland White-fronted Goose *Anser albifrons flavirostris* is the most distinct subspecies of the circumpolar White fronted Goose *Anser albifrons*. It breeds in west Greenland and migrates through Iceland to winter exclusively in Britain and Ireland, where it remains one of the rarest of wintering goose populations.
2. The population declined from 17,500-23,000 in the 1950s to 14,300-16,600 in the late 1970s and as a result of conservation concerns at the time, the population was protected from hunting and many of the sites supporting internationally important concentrations were given statutory protection.
3. The Greenland White-fronted Goose represented a conservation success story, since under protection measures, and helped by a series of good breeding seasons, the population increased from 17,000 in 1982/3 to 35,500 in 1998/9. However, in the subsequent years, numbers have fallen dramatically to less than 27,000 in 2001/2, a 25% decline in 3 years.

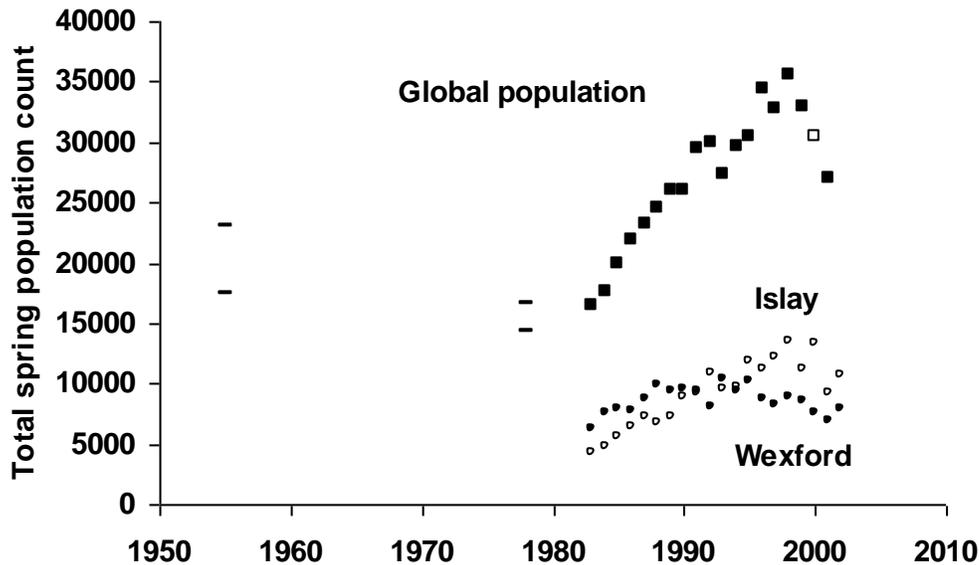


Figure 1. Total population estimates for the Greenland White-fronted Goose based on literature sources in the 1950s and late 1970s (upper and lower levels shown as vertical lines), and based on total spring counts of all known haunts since winter 1982/1983 (filled squares). Note the value for 2001 is estimated because

of the Foot and Mouth epidemic that year. Annual spring counts are shown for the two most important wintering resorts, Wexford Slobs (filled circles, southeast Ireland) and Islay (open circles, Inner Hebrides, Scotland).

4. Because the population is closed, and the annual population census covers all known wintering resorts, the change cannot be the result of changes in immigration or emigration, and must result from changes in birth or death rates.

5. Evidence from survival estimates based on resightings of collared individuals suggest no major changes since protection in 1982/3, supported by the results of population modelling based on counts at the two major resorts, Islay (Inner Hebrides, Scotland) and Wexford (southeast Ireland).

6. The proportion of young returning to winter at Islay and Wexford shows declining trends since protection. Evidence from detailed observations of collared birds at Wexford shows that known aged birds are showing a delay in the age of first breeding, and that an increasingly small proportion (<5%) of all goslings surviving their first winter survive to ever breed at all.

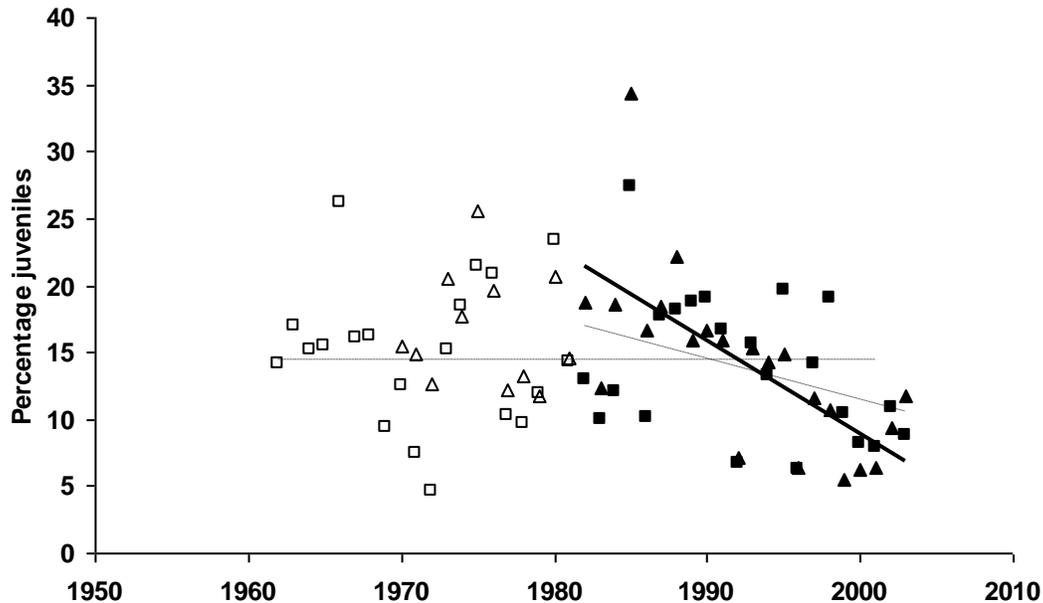


Figure 2. Trends in reproductive output amongst Greenland White-fronted Geese at Wexford (triangles) and Islay (squares) based on sampled age ratios of juvenile geese. Data are presented for the period prior to (open symbols) and post-protection from hunting on the wintering grounds (filled symbols). Pecked horizontal line shows the long term overall average. The declines since protection are statistically significant at Wexford (solid regression model line), but not on Islay (dotted line).

7. Simple mathematics shows that the decline in number is simply due to the failure of the reproductive potential of the population to replace annual losses, the latter of which have not changed substantially over a period of decades. The decline is explained by the sustained decline in reproductive output, and is less likely to be due to a small increase in mortality, although the causes for this long-term decline remain unknown.

8. Declines in breeding success are ultimately due to extrinsic factors such as changes in nest predation rate or intrinsic factors to do with female body condition.
9. There is no evidence for any change in nest predation rate in west Greenland, and it seems unlikely that such a change would occur synchronously throughout such an extended latitudinal range.
10. Factors affecting the ability of females to attain breeding condition could potentially act on geese during their period on the wintering grounds, spring staging or breeding areas. Several potential factors have been identified which could act at each point in the life cycle, broadly gathered under the headings (i) increases in local density, (ii) climate change and (iii) habitat change.
11. On the wintering grounds, analysis shows no evidence for density dependent decreases in reproduction at the site level, no general evidence of effects of climate change. There is some evidence that flocks wintering on intensively managed farmland have higher breeding success than those using bogland and semi-natural habitats, suggesting shifts from traditional habitats in the last 30 years have been associated with increased, not decreased, reproductive success.
12. On the spring staging areas, there is little evidence for climate or habitat change affecting breeding success.
13. On the breeding areas, there has is little evidence of the effects of climate change on breeding success and there has been no large-scale habitat change. There are no obvious effects of density dependence in breeding success detectable at the population level amongst Greenland White-fronted Geese.
14. Studies of interactions between Greenland White-fronted and Canada Geese (which have recently colonised west Greenland from Canadian breeding areas) on the summer areas show the behavioural dominance of Canada Geese, at least during the flightless moult, which results in local displacement of White-fronted Geese. However, more extensive survey is required to determine whether this is the major factor involved in depressing breeding success in Greenland White-fronted Geese.
16. The Canada Goose will become legal quarry in Greenland from spring 2004. Whilst there is no doubt that such exploitation may reduce their numbers locally, this will not solve the problem of declining reproductive success amongst Greenland White-fronted Geese. Care must also be taken to avoid increasing the kill of Whitefronts in West Greenland.
16. Greenland White-fronted Geese remain a quarry species in Greenland (where a few hundred are thought killed each year because of their inaccessibility) and in Iceland, where the bag has shown a significant increase during 1995-2001. This increase, coincident with the decline in global population size, means that the Iceland hunting kill has risen from 8% to 12% at present, and now contributes a significant, and increasing, element of overall annual mortality.
17. Whilst it is clear that the autumn hunt in Greenland and Iceland was sustainable during the period of population expansion of the 1980s and 1990s, the present level of kill cannot assist in returning the population to favourable conservation status. While the cessation of the autumn hunt cannot halt the current decline in the overall population, it is one tangible conservation action that will contribute to the slowing of the rate of decrease in numbers.

18. It is important that the management plan, drafted and agreed for this population in Wexford, Ireland in 1992 but never formally signed by the range states (Ireland, United Kingdom, Iceland and Greenland), be reconvened and updated, to establish research and monitoring priorities for action. Actions must be targeted to secure the population for the future to ensure that the international investment in the protection of the population that occurred in the 1980s and 1990s was not in vain.

Greenland White-fronted Goose Study  
March 2004