



Goose News

The newsletter of WWT's Goose & Swan Monitoring Programme
Issue no. 8, Autumn 2009

Conservation and management of increasing goose populations

Goose News provides up-to-date information on the status of goose and migratory swan populations using the UK. Some populations are declining, notably Greenland White-fronted Goose whilst several appear stable, for example, Iceland Greylag Goose. However, several populations are doing well, notably Iceland/Greenland Pink-footed Goose and Greenland Barnacle Goose (Figure 1; see page 2); both of which have increased seven fold since the early 1960s.

The divergence of population trends brings challenges to governments, land owners/managers and conservationists alike. For the populations that are declining, conservation action can be implemented based on an understanding of the processes involved in population limitation. If we are to be effective in understanding patterns of population change and predict future effects of changes in management, habitat availability, climate or human exploitation, demographic monitoring is essential. Regular counts (often annual), measures of annual breeding success, knowledge of the movements of birds and the role of individual life histories are the tools which enable demography to be explored. Information relating to changes in, for example, reproduction or over-winter survival, provides critical information about the point in the annual life cycle at which the population is most affected, providing a basis for more effective and targeted conservation actions.

Wildfowl are culturally important in many countries and are often regarded as flagships for wetland conservation. The majority of wildfowl wintering in the UK are long-distance migrants, breeding in Canada, Greenland, Iceland, Scandinavia, Fennoscandia, Russia and other northern European countries, thus the patterns and processes of their population dynamics can only be revealed by large scale and long-term studies. Consequently, the effective conservation of such species requires an understanding of factors operating outside, as well as within, the UK.



Pink-footed Geese (Graham Catley). Pink-footed Goose numbers have increased sevenfold since the early 1960s.

Overall, the number of geese wintering in the UK has increased from c 150,000 in the early 1960s to over 650,000 in the mid-2000s. Whilst successful conservation measures have been enacted during the last 40 years, for example site safeguard and the ban on the sale of goose carcasses in the late 1960s, thought and attention also needs to be given to populations that are increasing in number and in some case, range. In many local situations, the presence of very large numbers of migratory geese can have a marked effect on agricultural interests. The overall increase in goose numbers can thus be seen as a conservation success story, but also presents a dilemma. On the one hand, there are better opportunities for green tourism and wildfowling, with consequent economic benefits, but on the other hand, grazing by geese is impacting on the livelihood of individual farmers. While levels of grazing damage vary greatly, the perception of damage by farmers causes conflict that needs resolving.

It is not only the farming community that stands to lose from the current increase in some goose populations. A potential problem seen in North America, though not yet reported in Europe, is that with increasing goose numbers the geese may also suffer as a result of increased population density. This can lead to decreased breeding performance because of increased competition for food and breeding space, by degrading the habitats on which they depend and possibly even by facilitating the spread of disease and parasites. It may also impact on other Arctic breeding species. Competition between individuals of the same and different populations has always occurred and this is a

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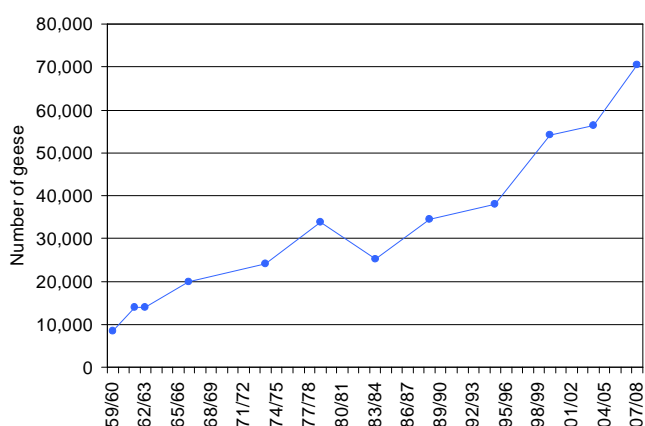


Figure 1. Numbers of Greenland Barnacle Geese counted during periodic censuses 1959/60 to 2007/08.

natural phenomenon. However, in North America the goal of the Arctic Goose Management Initiative was to reduce the mid-continent population of Snow Goose by 5-15% year on year to a level that could be sustainable by their Arctic habitats.

Goose management in the UK has traditionally been somewhat piecemeal. A network of protected sites (mostly roosts) has been established. In addition, farmers have been encouraged to scare geese from their land where problems arise. Licences have been issued to allow Pink-footed and Greylag Geese to be shot during the close season, and less frequently to allow White-fronted and Barnacle Geese to be shot. Compensation schemes have been introduced in Scotland, but the costs of these have escalated with increases in goose populations. In recent years, six goose management schemes were established by Scottish Natural Heritage (SNH) (and funded under SNH's Natural Care programme) in response to individual problem areas. Providing alternative feeding areas is another non-lethal option. This is an important part of goose management in North America and has been successfully employed in a few areas of Scotland to reduce the conflict between geese and local farmers. Scaring to redistribute geese and discourage them from particular areas is a further non-lethal approach and although scaring has been tried, it has often proved ineffectual and has the disadvantage of transferring the problem elsewhere.

Population reduction can offer a longer-term solution that does not simply move the problem elsewhere. The EU Birds Directive and the Wildlife & Countryside Act 1981 make an important distinction between quarry and non-quarry species. Quarry species, such as Greylag Goose, are those that can be hunted at any time outside the close season because their numbers are judged to be such that they can be exploited, with the intention that this is on a sustainable basis. Non-quarry species are more strictly protected in order to maintain or enhance their conservation status. Under UK law, individuals wishing to obtain a licence to shoot geese to protect crops must first demonstrate that no other satisfactory solutions exist. It follows that non-lethal methods of damage limitation are

preferable to lethal ones. However, hunting is an important management tool because it can influence the wider distribution of geese and because shooting mortality in geese is largely additive to natural mortality. Therefore, such population management needs to be carefully controlled and monitored. Another consideration is that geese are present on a network of protected sites, often designated for the range of wildlife supported. The legal protection of the birds and their habitats is a major consideration with respect to any future management strategies.

These management options have particular costs and benefits and the future conservation and management of geese in the UK seems dependent on developing integrated management strategies for each goose population. These need to be appropriate to the conservation status of the population and to the nature and scale of the problems encountered. Such strategies should continue to pay attention to the needs of individual farmers by transferring the cost of conservation to society as a whole.



Greylag Goose (Nicholas Cottrell)

The national framework for managing wild geese in Scotland will be reviewed in 2010 and adopting an integrated management strategy for each population seems an appropriate way forward. Management of increasing goose populations is also being considered at the next Goose Specialist Group meeting to be held in Lund, Sweden in October 2008 (see page 18).

Carl Mitchell

Survey dates for 2009/10

Icelandic-breeding Goose Census

Count forms for the 2009/10 IGC have been mailed to all counters or Local Organisers with this issue of *GooseNews*. If you have not received your forms, or would like to participate for the first time, please contact the Species Monitoring Unit at WWT Slimbridge. The coordinated dates for this year are:

17/18 October, 14/15 November and 12/13 December

Following a review of count periods (see page 4 of *GooseNews* 7), please remember that, ideally, all sites supporting Pink-footed Geese should be covered during October and November, whilst those holding Greylag Geese should be counted in November and December. There are still a small number of sites where both species occur. In these cases, please try to count in all months, but if this is not possible please discuss the best way ahead with your Local Organiser, if you have one, or the National Organiser, Carl Mitchell (see page 24 for contact details).

If you are unable to count on these dates, please contact either your Local Organiser or Carl Mitchell, so that we may try to arrange for cover of your site by another counter. As usual, we would like to encourage all counters to also carry out a count during September, particularly at those sites where Re-established or Northwest Scotland Greylag Geese occur. September counts are not strictly coordinated but should be carried out as close as possible to the end of the third week of September, although any counts made during the month will be of value (see page 8 of *GooseNews* 2, for further details – available to download from WWT's website at www.wwt.org.uk/research/monitoring/reports.asp).

International Swan Census

The International Swan Census will be held on 16–17 January 2010. Further information can be found in the Announcements section on page 4.

International Dark-bellied Brent Goose Census

The next flyway-wide coordinated count will be held on 1 May 2010. If you monitor a site where Dark-bellied Brent Geese may be found in May but have not been contacted regarding this survey in the past two years, we would be pleased to hear from you.

Colour-mark reading

All sightings of colour-marked wildfowl, not just geese and swans, can be sent either direct to the relevant project coordinator or to 'Colour-marked Wildfowl' at WWT Slimbridge, Glos. GL2 7BT, or by email to colourmarkedwildfowl@wwt.org.uk.

Further details of other colour-marking projects can be found on the EURING colour-marking website www.cr-birding.be.

Age assessments

Age assessments will continue during 2009/10 as usual. The survey periods vary between species and are shown below.

Population	Period	Notes
Whooper Swan	Oct - Jan	focus on Dec and Jan
Bewick's Swan	Nov - Feb	focus on Dec and Jan
Iceland Greylag Goose	Oct - mid Nov	care needed with age identification
Northwest Scottish Greylag Goose	Aug - Sep	
Re-established Greylag Goose	Aug - Sep	
Pink-footed Goose	mid Sep - mid Nov	
Bean Goose	Oct - Nov	
European White-fronted Goose	Oct - Jan	focus on Jan
Greenland White-fronted Goose	Oct - Jan	focus on Dec
Dark-bellied Brent Goose	Sep - Mar	focus on Oct - Nov
Light-bellied Brent Goose (both populations)	Sep - Mar	focus on Oct - Nov
Barnacle Goose	Oct - Dec	
Canada Goose	Jun - Jul	care needed when aging fledged birds

Announcements

International Swan Census January 2010

The weekend of 16–17 January 2010 will see the next International Swan Census take place. The census, which is organised by the Wetlands International/IUCN-SSC Swan Specialist Group, aims to provide accurate population estimates of migratory swans throughout their European wintering grounds. The last census took place in 2005 and recorded 26,366 Iceland Whooper Swans, the highest number recorded to date. This represented a 26% increase on the January 2000 census total (20,856), and a 66% increase compared with that of 1995 (15,842). Within the UK and the Republic of Ireland, 7,216 Bewick's Swans were counted, representing a 5.0% decline in numbers between 2000 and 2005 and a 4.6% decline between 1995 and 2005.

WWT will again be coordinating the census in the UK with a large input from WeBS, I-WeBS and The Irish Whooper Swan Study Group. Data collected by WeBS counters will be collated, however, we are also eager to record additional information on

the breeding success and habitat use of Bewick's and Whooper Swans, as well as counts of roosting birds made at dawn and dusk. Furthermore, we are seeking to make counts at sites not regularly counted for WeBS, for example river valleys and non wetland areas, such as agricultural fields.

All people who assisted with the local organisation of the 2005 census should already have received information regarding the organisation of the 2010 census. However, if anyone not involved in previous censuses would like to help with the census, or if you have any questions, please register your interest with Jacqueline Reed (see page 24 for contact details).

Further information about the census will be available from the WWT monitoring web pages in due course (www.wwt.org.uk/research/monitoring), and regular updates, recording forms and instructions will be made available to download.



Bewick's Swans (Richard Taylor-Jones)

Many thanks for all your help

The greatest strength of the GSMP lies in the tremendous volunteer input from you, the counters, ring-readers and other participants. We hope that you will continue to support the GSMP and, through it, the conservation of swans, geese and wetlands throughout the UK and beyond.

GooseNews is the newsletter of WWT's Goose & Swan Monitoring Programme. It is sent to participants each autumn and is available either as a printed copy or a pdf file that can be sent via e-mail. *GooseNews* is also available to download from the WWT website at www.wwt.org.uk/research/monitoring/reports.asp.

If you would prefer to receive *GooseNews* in an alternative format, please contact the Species Monitoring Unit at monitoring@wwt.org.uk.

Numbers of Dark-bellied Brents 1991–2008: breeding success still governed by lemming cycles

Following two decades of spectacular recovery in the number of Dark-bellied Brent Geese from the early 1970s until 1992, there has been a subsequent decline once again. A recent effort to collate all census data has now resulted in a more detailed overview. These show that in midwinter (January), the majority of Dark-bellied Brent Geese are found along the coasts of France (42%, on average during the period 1991–2008) and Britain (37%), with sizeable numbers also in the Netherlands (19%) (Figure 2). Smaller numbers are found in the Wadden Sea area of Germany (Lower Saxony and Schleswig-Holstein) and Denmark (2% in total).

In the period before 1991, a regular three-year pattern was present, with a population that boomed every third year when lemmings were peaking, for example the winters following the summers of 1982, 1985 and 1988. The last of these peaks followed the summer of 1991, but thereafter the three-year pattern was no longer detectable. From the peak count of 327,900 geese in January 1992, the population declined by approximately one third to just under 200,000 birds in 2004. Explanations as to why this decline occurred hinted at poor breeding success and, in order to try to find out why this was so poor, a series of expeditions to the Taimyr Peninsula, Russia, was carried out by the research institute Alterra of Wageningen University from 2002–2008.

In this period, only one significant lemming peak year was observed, in 2005, when the whole tundra was teeming with life. Snowy Owls were nesting, surrounded by nesting Brent Geese. Waders were also nesting in higher densities. Extremely high densities of Pomarine Skuas made it difficult for Arctic Foxes to roam freely over the tundra and Snowy Owls that tried to take goslings just as the Brent families were leaving were so heavily attacked by Pomarine Skuas that most goslings safely reached the nursery grounds. So, to the benefit of waders and geese, all predators more or less restricted one another in capturing prey other than lemmings. Even Brent Geese nesting in gull colonies were more successful, because lemmings were also available as an alternative food source for gulls, which reduced the rate of goose egg predation by gulls.

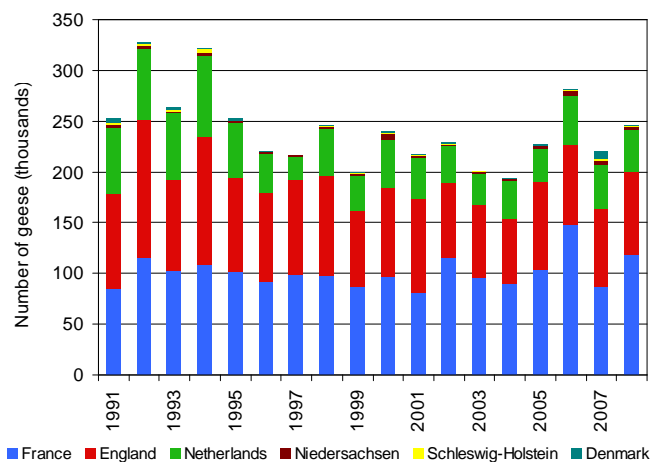


Figure 2. Numbers of Dark-bellied Brent Geese counted during mid-winter censuses in western Europe, 1991–2008.

The result of the successful breeding season in 2005 can be seen in the spectacular increase observed during the census in January 2006, when the population size increased from 227,300 to 282,300 birds, an increase of 24% in one year. Assuming an annual mortality of 15%, such an increase suggested an average proportion of first-winter birds in January of 32%. Large differences in the rate of increase were found between different countries however. In Britain, there were 9% fewer geese in the January 2006 census compared to 2005. In contrast, numbers in France increased by 42% and in the Netherlands by 51%, and in Lower Saxony the number of wintering Brent was twice as high (Table 1).

An interesting difference in the distribution of young birds over the wintering range was also noted. Lambeck reported that in the 1970s in the Netherlands a marked decrease in the proportion of young birds was found in midwinter after good breeding seasons, because most families moved on to the milder winter conditions in Britain and France. This resulted in higher proportions of young birds in midwinter in Britain and France. The proportion of young birds in January 2006, however, showed a different spatial distribution pattern. In France, the proportion of young was 24% in January, in Britain 28%, but in the Netherlands 42%.

Table 1. January 2006 census Dark-bellied Brent Goose totals per region before and after the lemming peak year in summer 2005.

	January 2005	January 2006	% change	% young
France	104,301	147,708	+42	24
Britain	85,497	78,141	-9	28
Netherlands	32,946	49,753	+51	42
Lower Saxony	2,116	4,601	+117	-
Schleswig-Holstein	703	720	+2	-
Denmark	1,774	1,387	-22	-

When weighted for the total numbers this would yield an average estimate for the whole population of 28%, slightly lower than, but close to, the expected 32%. Only in the northernmost part of the wintering area, in Schleswig-Holstein and Denmark, was there still, in line with Lambeck's conclusions, no change in numbers and the proportion of young.

The unexpectedly low number in Britain in January 2006 can be explained by two reasons. Firstly, as resightings of marked birds have demonstrated, many birds move on from Britain to France, and so it seems that a shift from Britain to France had already occurred. Secondly, more families clearly wintered further north in the Netherlands and Lower Saxony.

Both 2002, three years before 2005, and 2008, three years after, should have been lemming peak years, but in those years most lemmings did not survive the winter. In 2002, there were still some lemmings early in the breeding season, but in 2008 hardly any lemmings survived and that summer turned out to be a disastrous year for geese and waders alike. Why then did lemmings not peak in 2002 and in 2008? Here global warming might be involved. Though winters are still cold in Siberia, it seems that short periods of thaw are now occurring in the early spring. Short spells of thaw followed by a refreeze might well

be the key factor that affects the protective snow cover that lemmings need to reproduce throughout the winter. This may have prevented the lemmings from peaking in 2002 and again in 2008. In close cooperation with the Netherlands Institute of Ecology (NIOO-KNAW) and the Russian Severtsov Institute from Moscow, all relevant weather data are currently being analyzed.

The exceptional peak in 2005 showed that this lemming-driven predator-prey system, resulting in extremely high breeding success for geese and waders in lemming peak years, can still function on the Taimyr Peninsula. We were extremely lucky to be there in that particular year, which enabled us to study in detail the interactions between predators and prey under such conditions.

I would like to thank Sophie Le Dréan-Quénech'hdu and Roger Mahéo (France), Colette Hall (Britain), Kees Koffijberg (The Netherlands), Jan Blew and Helmut Kruckenberg (Niedersachsen-Lower Saxony), Klaus Günther (Schleswig-Holstein) and Stefan Pihl (Denmark) for supplying me with the results of the European mid-winter census.

Barwolt S. Ebbinge

The status and distribution of Greylag Geese in Ireland

The Icelandic-breeding population of Greylag Goose winters almost exclusively in Britain and Ireland. It has fluctuated over the past century; increasing from 30,000 birds in 1960 to almost 120,000 birds in the mid-/late 1980s. Our ability to accurately estimate this population in recent decades has been hampered by shifts in distribution, later arrivals from Iceland and increases in the resident populations of Greylag Geese. The Iceland population is currently estimated at c 90,000–100,000 birds, with the large majority wintering in Britain.

In Ireland, the Iceland population tends to concentrate at nine wetland sites/complexes. The resident population, which is estimated at close to 1,500 birds, is more widely distributed at over 120 locations throughout the country. The summer stock has largely descended from released birds, mainly in the 20th Century. Unlike in Britain, there is little evidence to suggest that Greylag Geese ever bred in Ireland, thus, we refer to the resident population as feral, and not re-established.

In 2007 and 2008, a thorough assessment of the status and distribution of Greylag Geese was carried out as part of a joint project of the National Parks and Wildlife Service and BirdWatch Ireland in the Republic and the Northern Ireland Environment Agency. This work was aimed at confirming the current number and distribution range of Icelandic and feral birds, and identifying movements of Icelandic birds between roosts and feeding areas. All sites known to be used by Greylag Geese were surveyed at least twice during the winter of 2007/08 and again during the early autumn (August and September) 2008. Sites known to be used by migratory (Icelandic-breeding) geese were surveyed in greater detail in December 2007 in an attempt at identifying regularly used feeding and roosting areas, and at defining goose movements.

Overall, some 405 visits were made by over 50 observers to 86 sites.

The total number of Greylag Geese of Icelandic origin was estimated at 4,761, and these occurred in nine main flocks (Figure 3). This represents a decline in numbers compared with the estimate of 5,030 from the 1999/2000–2003/04 period. Some 1,555 feral birds were estimated the following autumn (2008), and analysis of annual trends has shown that this population is increasing.

The largest number was recorded at the Lough Swilly/River Foyle/Lough Foyle complex. This area appears to be an arrival point for the majority of Icelandic Greylag Geese that winter in Ireland, prior to dispersal as the winter progresses. It is possible that this complex also supports some birds which later winter in Scotland. Other relatively large flocks were recorded at Loughs Neagh and Beg, Dundalk Bay and Strangford Lough. Feral birds were concentrated mostly at Lough Swilly, Greaghans, Lady's Island Lake, the Mullet Peninsula and Belfast Lough.

In some areas (eg parts of Mayo), the increase in the number of feral Greylag Geese is causing conflict with farmers, and is heightened due to their presence throughout the year. There is the danger that this issue may ultimately lead to the illegal persecution of wintering geese. Greater effort is required to control their numbers during the autumn, through legal wildfowling, especially at sites where large numbers are present.

In January 2008, a single bird from the UK re-established population (confirmed by ring resighting) was reported at Annaghroe on the Armagh/ Monaghan county boundary. Few,

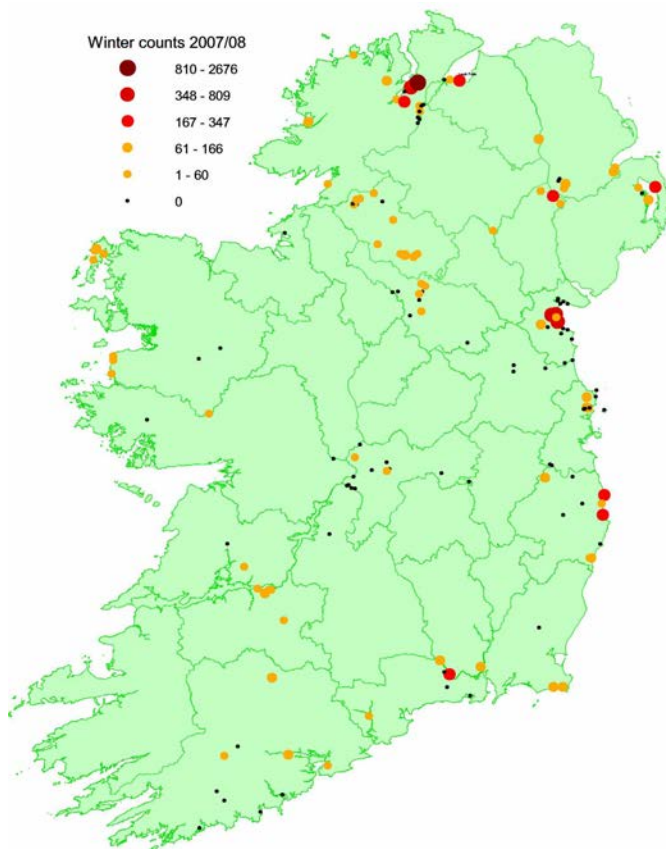


Figure 3. The distribution of Greylag Geese in Ireland in winter 2008/09.

if any, birds from the British-breeding population have previously been reported in Ireland. However, that population is increasing in size and range and there is thus an increasing likelihood that more birds from Britain will occur in Ireland. Some may even be moving back and forth between Britain and Ireland on a regular basis. This would bring increased complexity in understanding the status of Greylag Geese present in Ireland during the summer.

The present work has allowed us to gather significant information on the present distribution of Greylag Geese in Ireland and, for the larger flocks, on their roosting locations and movements between feeding and roosting areas. It is encouraging that all sites which support wintering Greylag Geese of Icelandic origin have been designated as Special Protection Areas under the EU Birds Directive, with the exception of a relatively newly-used site, the Barrow Estuary. Further survey work is required to get a better understanding of how this flock uses the area.

However, already we have witnessed the significant decline in numbers at one site which formerly supported in excess of 1,000 birds. This loss of usage by the geese highlights the conservation management challenges for this, and for other species, that are inextricably linked with intensive farming practices. It is essential that appropriate management plans are implemented in an attempt at restoring these SPA sites to favourable conservation status for wintering geese.

Olivia Crowe & Helen Boland

Effects of climate change on the breeding success of Greenland White-fronted Geese

Greenland White-fronted Geese showed several years of modest increase after protection from winter hunting during the 1980s and 1990s and were generally considered something of a conservation success story at the time. Since 1999, however, the population has been in rather rapid decline, due largely to much reduced proportions of young amongst the birds returning from the breeding grounds. The reasons for this have remained obscure, but several hypotheses have been put forward to explain the trend, including the colonisation of their west Greenland nesting range by large numbers of nesting and moulting Canada Geese from North America. Using climate data from the central White-fronted Goose breeding area in Greenland, Hugh Boyd and Tony Fox (*Wildfowl* 58: 55-70) tested an alternative hypothesis that changes in climate could have affected reproductive output. Female White-fronted Geese arriving in west Greenland from Iceland in spring must acquire energy and nutrients to invest in laying clutches and maintaining themselves during incubation, when they rarely leave the nest to feed. Heavy late winter and spring precipitation in west Greenland results in snow on arrival that interferes with the feeding possibilities for breeding pairs after arrival back on the breeding grounds prior to nesting. Since the mid 1990s, changes to sea surface temperatures in the northern Atlantic Ocean have been responsible for sending more frontal systems over west Greenland than in the previous 30 years,

resulting in dramatically more snow, at least in some recent years. Before 1995, there was a positive relationship between the proportion of young on the wintering grounds on Islay, Scotland and summer temperature on the breeding grounds. This relationship has clearly broken down since that time, with low production compared to previous years no matter how mild the summer. However, there has always been an inverse relationship between the proportions of young on Islay and the amount of spring precipitation in this part of Greenland. Since 1995, precipitation during April and May has increased in west Greenland (in some years being two to three times that of years during 1970–1995) and this contributes strongly to the continuing negative correlation between spring precipitation and the percentage of young on the two principal wintering grounds of Islay and the Wexford Slob, Ireland in the following autumn. However, breeding success post-1995 in some years of low precipitation was still low compared to comparable years pre-1995, suggesting that although increased precipitation has probably been a major factor contributing to reduced production of young, other factors (such as competition from Canada Geese) may also be having an effect on White-fronted Goose breeding success.

Tony Fox

Counter profile

Derek Forshaw: Area Organiser for South West Lancashire



Which area do you count and how long have you been goose counting?

It was as a young boy living in Southport during the 1950s that I first became familiar with the wild geese that flew, in seemingly vast numbers, over my parent's home each morning and evening during the winter months. I soon discovered that these were Pink-footed Geese and that they arrived each autumn from their breeding grounds in Iceland and Greenland. The geese were taken as part of the 'Southport scene', and I remember being mightily impressed by the sight and sound of the skeins - the birds roosted on the nearby Ribble Estuary and were flying to and from their daytime feeding fields.

It was in 1971 that I first began to count and study the geese in the Lancashire feeding areas, which, then as now, extended from Martin Mere south through the southwest Lancashire moorlands as far as Altcar and Little Crosby, although more recently, as the population has increased, new feeding areas have been established.

Describe the roosts and counting conditions. Have goose numbers and their distribution, local to you, changed over the years?

The regular November goose counts, organised by the Wildfowl Trust (as it then was) and the predecessor of the present IGC, showed that numbers during the 1950s had not exceeded 4,500 in Lancashire, although numbers appeared to be increasing. It is now known, of course, that this reflected the marked increase in the overall population that has continued through to the present time.

In the early days, there were only two main roosts in southwest Lancashire, the Ribble Estuary and the Alt Estuary, although the inland roost at Martin Mere was established soon after the Wildfowl Trust developed the reserve there. Also in the 1970s, the birds formed field roosts, most notably at Altcar Withins, although this practice later ceased.

From the early 1970s, it quickly became apparent that I couldn't cover the whole feeding area on my own. From 1976/1977, having recruited a number of fellow counters, the first counts

took place covering all the Lancashire Pink-footed Goose feeding areas, and these have continued without a break for a total of 33 seasons. I'm truly grateful to the unselfish efforts of those who have helped me with these counts over such a long period and I pay tribute to them. It is a hard task counting geese, involving an early start, driving for miles around the countryside and often having to cope with poor weather, especially restricted visibility, which can completely ruin any chance of an accurate count result. Furthermore, disturbance to the geese is frequent and invariably leads to counts being messed up; all goose counters will be familiar with the frustration of birds that won't stay put in one place while they are counted! Hence obtaining good and accurate counts can be a tiring and stressful exercise for all concerned. At first, there were nine counts per season, but later I reduced this to six and more recently to just four. The first three of these are timed to correspond with the IGC dates in October, November and December.

Have there been any particular changes in recent years?

Firstly in the number of birds visiting Lancashire. From a maximum of 18,000 Pink-footed Geese in 1976/77, the 20,000 milestone was passed in 1979/80, and 30,000 in 1981/82. The first count exceeding 40,000 birds was obtained in 1996/97, and in 2000/01 a record 46,925 was achieved. During the 2008/09 season, just ended, the extraordinary total of 90,455 Pink-footed Geese was obtained on 2 November 2008, and numbers exceeded 45,000 on the other three dates – a record year by a very substantial margin!

Over the years, there have been notable changes in roosting habits. The traditional roosts at Morecambe Bay, and the Ribble and Alt Estuaries continue, but there are new roosts now at the Wyre Estuary, WWT Martin Mere and Simonswood Moss. Also, birds will roost inland when conditions encourage them to do so, especially on sites where there is floodwater. There have also been considerable changes in the areas used for feeding. There has been a massive increase in the importance of northern Fylde, whereas the Martin Mere area has declined, especially the former Scarisbrick Estate. Large areas in the Bickerstaffe, Rainford and Knowsley areas are now used regularly as feeding areas, as are areas between Halsall and Aughton. The birds are highly mobile and move around between roosts and feeding areas very readily.

There has also been an increase in disturbance of the geese on the feeding fields and in some areas a lack of suitable food. The former has been exacerbated by changes in land use, the disposal of the larger shooting estates and an increase in leisure activities. The latter has resulted from changes in agricultural measures, cropping regimes and the early ploughing of stubbles. An increase in turf growing is an example.

Favourite moment since starting goose counting?

Manoeuvring close to a flock of feeding Pink-footed Geese, using the car as a hide and getting stunning views of the birds in the golden sunlight of an October afternoon as the flock is continually swollen by skein after skein of incoming birds, has to be a favourite, every time.

Progress reports

Breeding success of Bewick's Swans in 2008/09

Age counts conducted in Britain during winter 2008/09 indicate 2008 was another poor breeding season for Bewick's Swans. Assessments were undertaken at three major wintering sites: WWT Slimbridge (Southwest England), WWT Martin Mere/Ribble Estuary (Northwest England) and the Ouse Washes (East Central England). A total of 1,025 birds was aged and brood sizes were recorded for 33 families. Overall, flocks contained 6.4% cygnets and the mean brood size was 1.5 young per successful pair (Figure 4).

Although the proportion of young was slightly higher than the previous year it was much lower than the five-year mean (2003/04–2007/08: 10% \pm 1.7 SE) and, following the exceptionally poor success in 2007/08 (4.7%), was the next lowest recorded since 1997/98 (5.3%). Similarly, the mean brood size was marginally above that for 2007 but below the average for the previous five years (1.92 \pm 0.14 SE).

There was marked variation in the proportion of cygnets recorded in different parts of Britain, with the percentage of young ranging from 5.1% to 18.0% (Table 2). The highest was recorded at WWT Martin Mere/Ribble Estuary, where breeding success was above average (mean 2003/04–2007/08: 12.2% \pm 2.5 SE) although the sample size was small. This contrasted greatly with the low success found on the Ouse Washes (5.1%) and at WWT Martin Mere/Ribble (7.5%). As few broods were recorded at WWT Martin Mere/Ribble, regional variation in brood size could not be assessed.

Poor breeding success was also found in the Netherlands, where only 4.0% of 3,000 birds aged were juvenile. A coordinated age count of 6,942 birds wintering at sites in the UK and in the Netherlands and Denmark in December found 7.2% young, thus confirming that 2008 was a very poor



Figure 4. The mean percentage of young Bewick's Swan recorded in Britain, 1987/88–2008/09 (blue circles), with the rolling five-year mean (red line) and mean brood size (red squares). Five-year mean values were calculated for the five winters preceding the winter in question.

breeding year for the Northwest European population of Bewick's Swan (W. Tijssen pers comm. 2008).

Conditions on the breeding grounds are likely to be important in determining the population's breeding success, in particular weather conditions during the short Arctic breeding season. A late spring thaw (mid-June) in the Pechora Delta region of the Russian Arctic in 2008 (A. Glotov pers comm. 2008) was likely to have impacted on the breeding programme for swans nesting at least in that part of the breeding range.

Special thanks to Charlie Liggett for information from the Ribble Estuary and to Wim Tijssen for reports from the Netherlands.

Julia Newth

Table 2. The proportion of young and mean brood size for Bewick's Swans at three UK sites during winter 2008/09.

Region	Total aged (no. of young)	% young	No. of broods (no. of young)	Mean brood size
WWT Martin Mere/Ribble Estuary (Northwest England)	61 (11)	18.0	6 (11)	Limited data
Ouse Washes (East Central England)	724 (37)	5.1	16 (22)	1.4
WWT Slimbridge (Southwest England)	240 (18)	7.5	11 (18)	1.6
Overall	1,025 (66)	6.4	33 (51)	1.5

Progress reports

Breeding success of Whooper Swans in Britain and Ireland in 2008/09

Whooper Swan age counts were conducted within six regions across Britain and Ireland during winter 2008/09, when a total of 5,844 birds was aged and brood sizes were recorded for 460 families (Table 3). Overall, the proportion of young was 16.8% and the mean brood size was 2.1 cygnets per successful pair.

Breeding success was slightly above average for all regions surveyed, with the exception of East Central England (Table 3). The highest proportions of young were recorded in the Republic of Ireland and Southwest Scotland, the latter recording the highest for the region since 2001/02 (20.5%). In East Central England, breeding success was below the five-year average for the area (2003/04–2007/08: 13.0% \pm 2.1 SE). Following an increase in breeding success since 2005/06 in Northwest England, the proportion of young recorded there was 3% lower than in 2007/08. Regional variation in brood size was also evident, ranging from an average of 2.0 cygnets per family for flocks wintering in East Central England to 2.6 cygnets per family in Southwest Scotland (Table 3).

The mean percentage young at WWT Martin Mere/Ribble Estuary, the Ouse Washes and WWT Caerlaverock (14.9%) was similar to the average for the previous five years (2003/04–2007/08: 14.7% \pm 1.6 SE; Figure 5), although not as high as that recorded there during the 2007/08 winter (20.4%). Overall, breeding success for Whooper Swans wintering in the UK during 2008/09 (16.8%) was above the five-year average for birds aged at WWT Centres of (14.7%).

Breeding success in 2008 was most probably influenced by the warm and dry conditions encountered across the breeding grounds in Iceland during May to July, where temperatures were above or close to average. Poorer breeding success

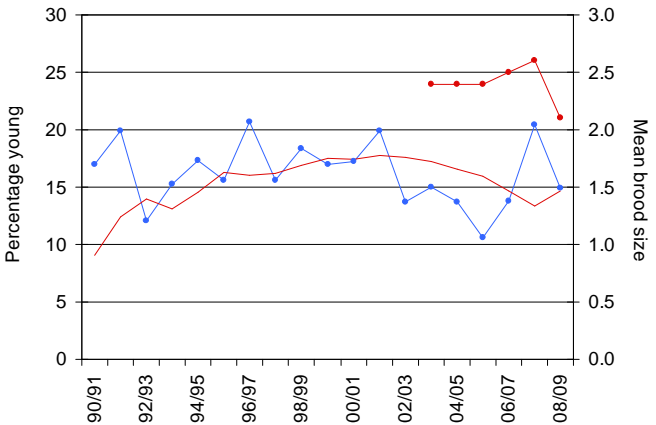


Figure 5. The mean percentage of young Whooper Swans recorded on the Ouse Washes, WWT Caerlaverock and WWT Martin Mere/Ribble Estuary, 1990/91–2008/09 (blue circles) with the rolling five year mean (red line), and mean brood size (red squares). Five-year mean values were calculated for the five winters preceding the winter in question.

in East Central England may reflect the likely preference of Whooper Swan families in selecting sites closest to their Icelandic breeding grounds, with non-breeding birds travelling further south.

Special thanks to Brendan Friel, Chris Jones, Don Cotton, Gareth Coughlin, Graham McElwaine, Gerry Murphy, Joe Devlin, Laura Glenister, Martin Enright, Michael Casey, Pat Watson, Seamus Burns and Seamus Feeny (for counts made in the Republic of Ireland and Northern Ireland), Charlie Liggett and Kane Brides (Lancashire) and John Bowler (Scotland).

Julia Newth

Table 3. The proportion of young and mean brood size in Whooper Swan flocks during winter 2008/09.

Region	Total aged (no. of young)	% young	No. of broods (no. of young)	Mean brood size
Northwest England	1,299 (237)	18.2	120 (247)	2.1
East Central England	1,421 (156)	11.0	82 (165)	2.0
Southwest Scotland	331 (63)	19.0	18 (46)	2.6
North and Central Scotland	201 (38)	18.9	11 (26)	2.4
Northern Ireland	1,739 (316)	18.2	151 (316)	2.1
Republic of Ireland	853 (169)	19.8	78 (169)	2.2
Total	5,844 (979)	16.8	460 (969)	2.1

The Icelandic-breeding Goose Census 2008

The 49th consecutive census of Greenland/Iceland Pink-footed Geese and Iceland Greylag Geese took place during autumn and early winter 2008. Sites holding Pink-footed Geese were checked primarily in October and November, whilst those holding Greylag Geese were checked primarily in November and December. The staggering of counts has become necessary due to later departures of Greylag Geese from their Iceland breeding grounds. Some sites in the UK were also counted during late August and September in order to estimate the numbers of Greylag Geese from the Northwest Scotland and Re-established populations present prior to the arrival of Icelandic migrants. Coverage in Britain was good, with the majority of the key sites covered. Count data were received from Norway, the Faroe Islands, Ireland and Iceland. Weather conditions were generally considered favourable during the counts with very few sites reporting underestimated counts due to poor visibility or disturbance.

Maxima of 340,734 Pink-footed Geese were counted in October 2008 and 110,441 Greylag Geese in November 2008. These figures were adjusted to account for major sites that were not counted and for the number of birds from either of the two British Greylag Goose populations counted prior to this census, resulting in population estimates of 351,188 Pink-footed Geese and 98,291 Greylag Geese (Figure 6). The 2008 figures represent an increase of 23.5% in Pink-footed Goose numbers and a decrease of 6.9% in Greylag Goose numbers; population estimates for 2007 were revised following corrections to count data, the revised estimates being 284,405 for Pink-footed Goose and 105,630 for Greylag Goose.

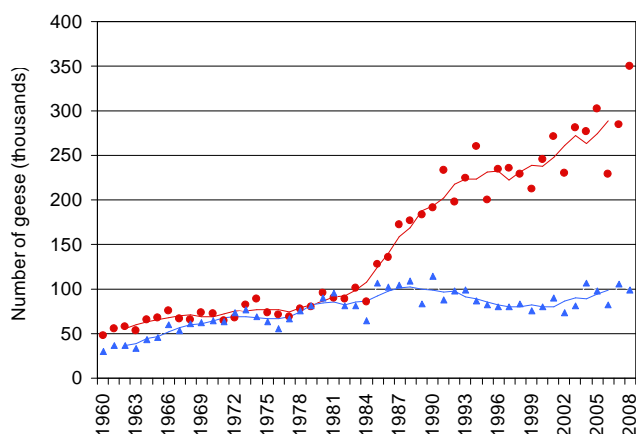


Figure 6. Population estimates for Pink-footed Goose (red circles) and Iceland Greylag Goose (blue triangles), 1960 to 2008. The five-year running means (eg mean for 2006 is from population estimates for 2004–2008) are shown as lines.

The breeding success of Pink-footed Geese was above the mean for the previous decade at 22.8% young (mean percent young 1998–2007: 19.1% \pm 0.38 SE) (Figure 7). The mean brood size of successful pairs was 2.08 goslings, which was slightly lower than the mean recorded during the preceding ten years (2.19 \pm 0.06 SE). The breeding success of Iceland Greylag Geese was also relatively high, with flocks containing 25.0%

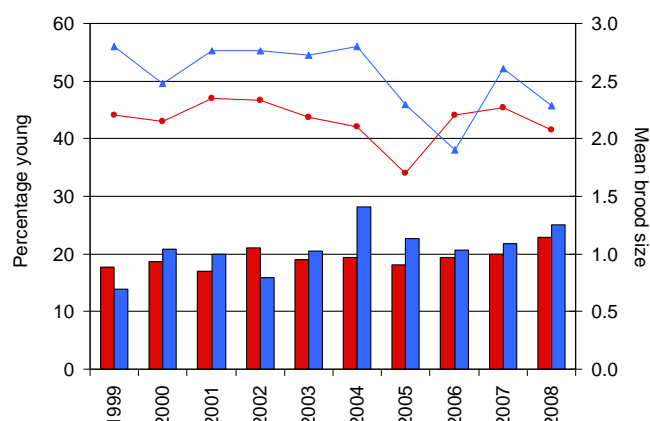


Figure 7. The percentage of young (columns: red = Pink-footed Goose, blue = Greylag Goose) and mean brood sizes (lines: red circles = Pink-footed Goose, blue triangles = Greylag Goose) of Icelandic-breeding geese in Britain, 1999–2008.

young (mean percent young 1998–2007: 20.4% \pm 1.21 SE), although the mean brood size of 2.29 goslings per successful pair was less than that of the recent ten year mean (2.60 \pm 0.09 SE).

Pink-footed Geese were early in reaching Britain in autumn 2008 with a rapid increase in numbers witnessed at several important sites – the top five sites alone accounting for 63.6% of the population estimate. In order to avoid the mid-month full moon, the October count weekend was also unusually early and it seems that, with some good fortune, in autumn 2008, a mass early arrival of Pink-footed Geese into Britain coincided with favourable count conditions. Arnór Sigfússon reported that very few Pink-footed Geese were recorded in central Iceland in October, however, the species often remains dispersed in inaccessible areas at this time.

The increasing concentration of the Iceland Greylag Goose population on Orkney continued, with a record count of 68,349 in December 2008. However, a comprehensive survey of the summering population (breeding pairs, their young and a large non-breeding component) was carried out in summer 2008 and an estimated 10,000 birds was found by Eric Meek and his colleagues. Previous estimates of the summer stock have been lower than this (5,000 birds in 2007, for example). Thus, the 2008 summer survey has given us greater confidence in estimating the number of Iceland Greylag Geese wintering on Orkney. For example, it is highly likely that there were more than the estimated 5,000 summer Greylag Geese on Orkney in autumn 2007, and the population estimate in that year could therefore have been an overestimate of several thousand individuals. However, the movements of the summering birds remains largely unknown, although it is thought that most of them are resident and that the Iceland stock joins them from November onwards. A ringing programme of both summer and winter birds has recently been initiated by Alan Leitch and Orkney Ringing Group and this will shed light on whether any Orkney summering birds leave the islands during the winter.

Carl Mitchell

Progress reports

Taiga Bean Geese in Britain, 2008/09

The numbers of Taiga Bean Geese wintering on the Slamannan Plateau in 2008/09 remained high, peaking at 265 birds, only a slight fall from the record of 300 birds observed in 2007/08 (Figure 8). Arrival at the site was typical, with the first birds being observed in mid-October and numbers rapidly building throughout the month. However, approximately 100 birds appeared to leave the area at the end of December. Numbers remained low until migration back to the breeding grounds began during the last week of February. It is not known where these birds re-located to.

At the Yare Valley the number wintering was the highest recorded at the site since the winter of 2001/02. The peak count of 206 geese recorded during November is an increase of 70 birds on the previous winter's peak count and 44% higher than the previous five-year mean (2003/04–2007/08; 142 ± 10 SE). Numbers remained high throughout the winter, the December and January counts were both considerably above the previous five year mean. By February however, only 27 geese remained at the site.

Data on the breeding success of Taiga Bean Geese in 2008 was limited due to poor weather conditions during the main assessment period. Only 33 birds from a flock of 60 were aged at the Slamannan Plateau during late October, of these 24 were adults and nine were young. The proportion of first-winter birds was thus estimated at 27.3%, however, as the sample size

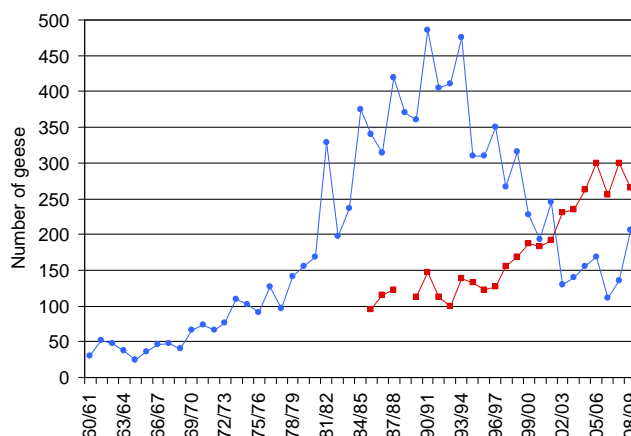


Figure 8. Peak counts of Bean Geese at Yare Valley (blue circles) and Slamannan Plateau (red squares). No data are available for the Slamannan Plateau in 1988/89.

was very small this figure is unlikely to be representative of the whole population. No brood size data were collected during 2008.

Many thanks to Angus Maciver (Slamannan/Bean Goose Action Group) and Alasdair Fraser (RSPB Yare Valley) for the information presented in this article.

Jacqueline Reed

Latest monitoring of Northwest Scotland Greylag Geese

Annual monitoring of all Northwest Scotland Greylag Geese is not possible due to the remoteness of much of its range. However, annual counts and productivity estimates are conducted in two key areas, namely the Uists (Outer Hebrides) and on Tìree (Inner Hebrides). The number of birds at these two locations has steadily increased since the 1980s (Figure 9).

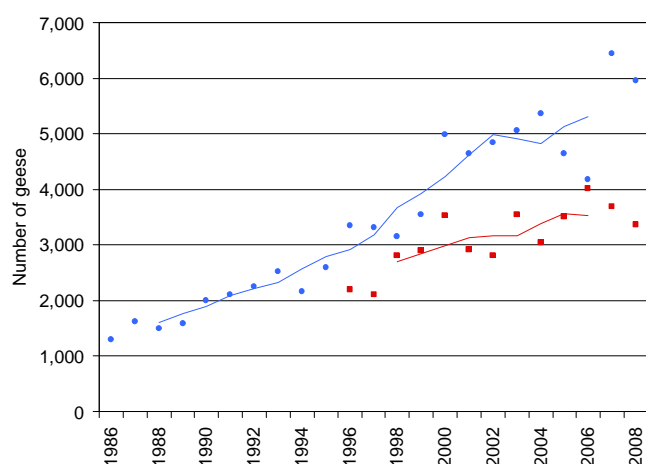


Figure 9. Counts of Northwest Scotland Greylag Geese recorded in late August on the Uists, Outer Hebrides (blue circles) and Tìree, Inner Hebrides (red squares), 1986–2008. The five-year running means (eg mean for August 2006 is from counts for August 2004–2008) are shown as lines. Counts on the Uists in late summer 2005 and 2006 were considered underestimates.

A total of 5,948 Greylag Geese was counted on the Uists in late August 2008, a decrease of 7.6% on the August count for the previous year (Figure 9). During February 2009, a count of 4,661 was made, representing a decrease of 7.8% on the count in February 2008. On Tìree, an island-wide census in late August 2008 produced a count of 3,370 birds, a decrease of 8.8% on the count in August 2007 (Figure 9). Numbers have declined in 2007 and 2008 after reaching a high point in 2006 (4,005 birds), which reflects the increase in the number of birds shot under licence.

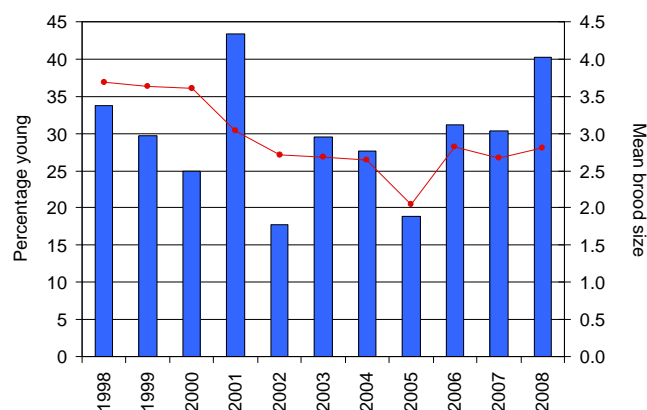


Figure 10. The mean percentage of young (blue columns) and mean brood size (red circles) of Northwest Scotland Greylag Geese on Coll and Tìree, 1998–2008. Data for 1998 to 2000 from Bowler *et al* (2005).

A total of 2,491 Northwest Scotland Greylag Geese was aged on Tiree in August 2008 and brood sizes were determined for 358 broods. The percentage of young birds in the post-breeding count was 40.3% – well above the average for the previous five years (mean 2003–2007: $29.8\% \pm 3.47$ SE) whilst the mean brood size was 2.81 goslings per successful pair (mean 2003–2007: 2.59 ± 0.14 SE) (Figure 10). On the Uists, a total of 782 birds in 27 flocks was aged in August 2008, with an overall proportion of young of 27.1% (mean 2003–2007: $28.9\% \pm 1.97$

SE). The mean brood size was 2.62 goslings per successful pair, from a sample of 29 broods (mean 2003–2007: 2.66 ± 0.03 SE).

Special thanks go to John Bowler (Tiree), Ben Jones (Coll), Roderick McDonald, David Mackay and Andrew Stevenson (all Uists) for the provision of data presented here.

Carl Mitchell

Latest Greenland White-fronted Goose Census results

In 2007/08, complete coverage of Britain and Ireland was achieved during the 26th annual census of Greenland White-fronted Geese, producing the third complete population estimate since 2000. Combined results from spring 2008 gave an overall estimate of just over 23,200, which is lower than the previous estimate of 24,895 in spring 2006, and well below those recorded in spring 2002 (26,412) and 1999 (35,573).

Numbers in Britain were similar to the previous year (Figure 11), with totals of 12,122 and 13,114 recorded during autumn 2007 and spring 2008, respectively. Over 50% of the geese were seen on Islay, where numbers were higher than the previous spring, suggesting there may have been an underestimation there in 2007 when counts were much lower than in 2006.

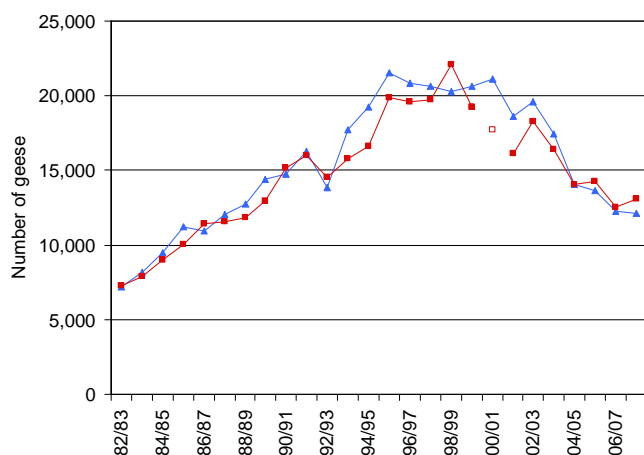


Figure 11. Counts of Greenland White-fronted Geese in Britain, 1982/83–2007/08, showing autumn (blue triangles) and spring (red squares) census results. Note the missing value for spring 2001 (unfilled square) on account of the outbreak of Foot and Mouth Disease that year.

In Ireland, the spring 2008 total of 10,095 was only slightly lower than the last complete census in 2006 (10,608). The count from Wexford, where the majority of geese were recorded, was 22% lower than the previous spring, although this was also well down on counts from earlier in 2008, suggesting many of the geese had left before the census was undertaken. This may also help explain the increase in numbers on Islay.

Breeding success was again relatively poor and remained below the level required to replace annual losses (Figure 12). In Britain, the overall percentage young recorded amongst 5,929 birds aged was 9.7% and, for the 124 families assessed, the mean brood size was 3.03 young per successful pair. The proportion of young varied greatly between wintering sites, ranging from 0–28.6%. Despite results on Islay being similar to the previous winter and only slightly lower in the rest of Britain, numbers were still below the 1982–2006 average (10.1% compared with an average of 13.1% on Islay, and 9.3% compared with 12.8% for elsewhere). In Ireland, flocks contained 9.5% young. Of the 5,870 birds aged, the majority were at wintering sites in Wexford, where the proportion of young was 10.0% and the mean brood size was 3.34 young per successful pair. Away from Wexford, breeding success was lower, at 5.4% young.

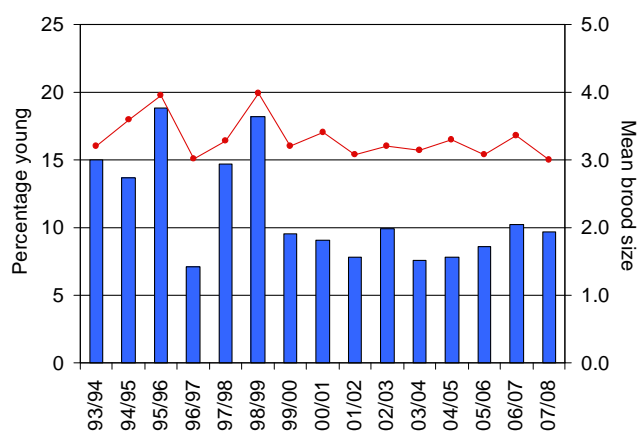


Figure 12. The mean percentage of young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Britain, 1993/94–2007/08.

Taken from Fox, AD & I Francis. 2008. Report of the 2007/08 *National Census of Greenland White-fronted Geese in Britain*. Greenland White-fronted Goose Study. Kalø.

The full report can be downloaded from www.wwt.org.uk/research/monitoring/reports.asp or www.greenlandwhitefront.homestead.com.

Colette Hall

Progress reports

Svalbard Barnacle Goose monitoring in 2008/09

Historically, Svalbard Barnacle Geese were common on the Solway Estuary, but by the 1930s a substantial decline in numbers had occurred. The lowest ever count, of only 300 geese, was made in 1948. Protection from hunting and the establishment of the National Nature Reserve at Caerlaverock in the 1950s led to a recovery in numbers, and, by the 1960s, there were 3,000–4,000 birds. Further increases occurred during the 1970s and 1980s, following the establishment of the WWT reserve at Caerlaverock. This trend continued through the 1980s and 1990s, with a sharp increase in numbers in the mid-1990s. In 2008/09, 60 years after the low point of 300 birds, the population was close to 30,000 geese (Figure 13).

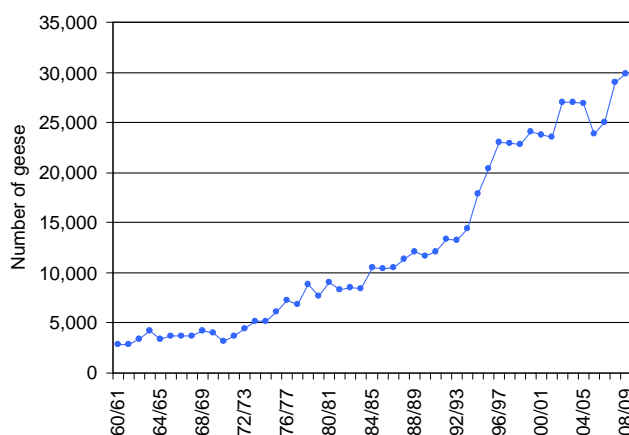


Figure 13. Winter population estimates for Svalbard Barnacle Goose, 1960/61–2008/09 (WWT data).

From 1 October 2008 (by which time 4,567 Barnacle Geese had arrived on the Solway) to 25 May 2009 (when 22 remained), 18 coordinated counts were carried out across the whole of the Inner Solway Estuary. The peak count was 31,111 geese recorded on 15 October. As a precaution against the possibility of some of the birds having been counted twice, this count was averaged against all of those within 10% of it during the October to April period; five counts in all. This procedure gives an adopted population total for 2008/09 of 29,900 birds (rounded down to the nearest 100). This is an increase of 3% on the adopted population estimate of 2007/08 (29,000 birds).

A spectacular mass arrival was recorded by many observers on 1 October 2008 at Budle Bay, Northumberland. These birds moved on to the Solway that night and during the next few days, such that the coordinated counts rose rapidly from 4,567 geese on 1 October to 23,022 geese by 8 October, with the whole population probably present on the Solway by 15 October, when the count of 31,111 geese was made. Several hundred Barnacle Geese passed through the Loch of Strathbeg, Aberdeenshire area during early autumn although less than 100 birds over-wintered there.

Between 2 October 2008 and 15 January 2009, a total of 10,300 Barnacle Geese was aged by a single observer at WWT Caerlaverock and at other sites around the Solway. A total of 17 flocks was sampled, varying in size from 217 to 5,550 birds.



Barnacle Geese (Richard Taylor-Jones)

The number of birds sampled within these flocks ranged from 129 to 1,480. The overall percentage of young present in these flocks was 8.7% (Figure 14), ranging from 1.7% to 13.6% within individual flocks. As with the 2007/08 season, this value is above the current ten-year mean ($7.8\% \pm 1.4$ SE), indicating an average breeding season.

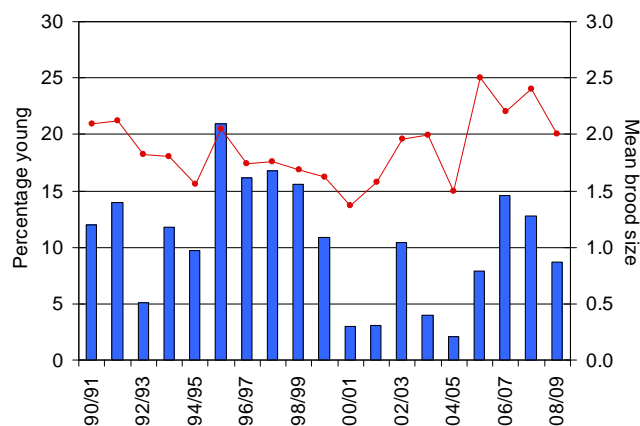


Figure 14. The mean percentage of young (blue columns) and mean brood size (red circles) of Svalbard Barnacle Geese on the Solway, 1990/91–2008/09 (WWT data).

Brood size was recorded for a total of 162 families and the mean brood size per successful pair was 2.0 goslings (Figure 14), ranging from 1–4 goslings. This is down slightly on the previous year, although the mean for the most recent ten year period (1999/2000–2008/09) remains unchanged at $1.9 (\pm 0.1$ SE) goslings per successful pair.

Larry Griffin

Breeding success of Dark-bellied Brent Geese in 2008

Results from Dark-bellied Brent Goose age assessments made in the UK during winter 2008/09 indicate that 2008 was the poorest breeding season since 2000/01 (Figure 15). A total of 91,155 was aged at seventeen estuaries or coastal areas, from the Humber Estuary to the Solent, between September and April. The highest numbers were aged at the Thames and Blackwater Estuaries and the North Norfolk Coast.

The overall proportion of young was 1.1%, increasing from 0.1% in October to 1.5% in March, fluctuating only slightly throughout the winter. The mean brood size also varied very little during this time, peaking at $2.25 (\pm 0.63 \text{ SE})$ young per successful pair in March, with an overall mean of $1.74 (\pm 0.06 \text{ SE})$ amongst the 294 families assessed. Of the 314 flocks observed, the majority contained less than 2.0% young, and 131 flocks held no young at all. The highest proportion of young was recorded amongst flocks of fewer than 100 birds.

After a gradual increase in breeding success between 2000 and the exceptionally good season in 2005, there followed a poor year in 2006 and, if compared with other years, variable success in 2007. This suggested that breeding success may be returning to the three-yearly cycle that Dark-bellied Brent Geese were previously shown to follow but which had failed to occur between the mid 1990s and 2005, when there were fewer than expected good seasons. The pattern between 2005 and 2007 also closely followed that of lemming abundance on the breeding grounds (exceptionally high in 2005, a crash in 2006 and a variable year in 2007), a factor known to greatly influence breeding success but a connection that is, perhaps, no longer functioning in the same way given the shift in the cycle. Thus, according to the three-yearly cycle, 2008 was expected to be a good year, however, this was not the case. Reports from monitoring stations at breeding areas on the Taimyr Peninsula, Russia, indicate that whilst lemmings were common in some

areas, numbers dropped dramatically as the summer progressed, and Arctic Foxes were also common. The summer was also generally colder than the previous year. It is likely that these factors influenced the overall breeding success of the geese, causing a poorer season than expected. For further information, see Bart Ebbinge's article on page 5.

As always, our thanks go to the network of experienced fieldworkers who undertook these age assessments for the twenty-fourth consecutive winter.

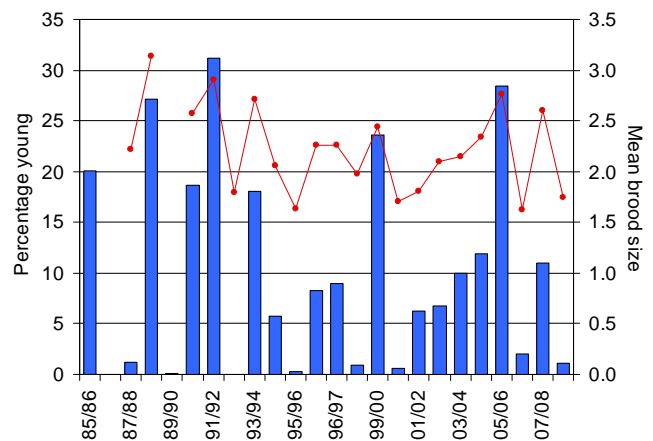


Figure 15. The percentage of young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese recorded in the UK, 1985/86–2008/09. No brood size data are available for 1985/86, 1986/87 or 1989/90.

A more detailed account of the results is available on our website at www.wwt.org.uk/research/monitoring/species/dark_brent.asp.

Colette Hall

Canadian Light-bellied Brent Goose monitoring in 2008/09

The autumn 2008 census returned comprehensive counts from along the flyway for the seventh consecutive year, including aerial survey in Iceland and near-synchronous counts at major Irish haunts on 11-12 October. An aerial survey of the major sites in Breidafjörður and Faxaflói (both in Iceland) recorded 6,066 birds. Counts at the main Irish sites on these dates included 2,583 (Lough Foyle), 25,605 (Strangford Lough), 768 (Tralee Bay & Castlemaine Harbours), 229 (Co. Down coastal sites), 1,254 (Dublin-Lough), 70 (Larne Lough) and 1,000 in Sligo Bays/Killala. With the addition of smaller counts from Jersey, northern France and parts of western Britain, the overall total count was 37,650 birds (Figure 16).

Despite synchronising counts across the flyway, we cannot account for unknown numbers of birds which may be mid-Atlantic (between Iceland and UK-Ireland) nor indeed the much smaller numbers which may be trickling eastwards from Greenland. Given reasonably high breeding success again in 2008 (see below) we would have expected numbers in excess of

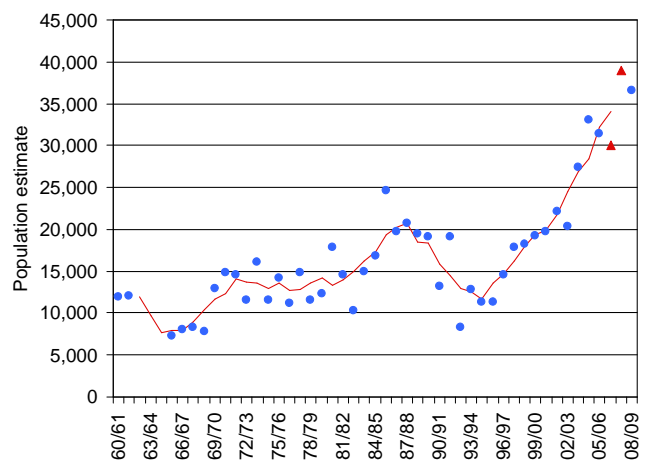


Figure 16. Population estimates of ECHA Light-bellied Brent Goose, 1960/61–2008/09. The five-year running mean (leg mean for 2002 is from population estimates for 2000–2004) is shown as a red line. The red triangles indicate provisional estimates for 2006/07 and 2007/08.

Progress reports

40,000 so suspect that several thousand birds were missed or possibly 'at sea' on migration at the time of the count.

Breeding success was good with the proportion of young recorded as 18.3% amongst a total of 12,677 aged geese (Figure 17), and above the most recent ten-year mean (1998–2007; $13.6\% \pm 3.21$ SE). No brood size data are yet available.

Kendrew Colhoun

on behalf of

Kerry Mackie & Gudmundur A Gudmundsson

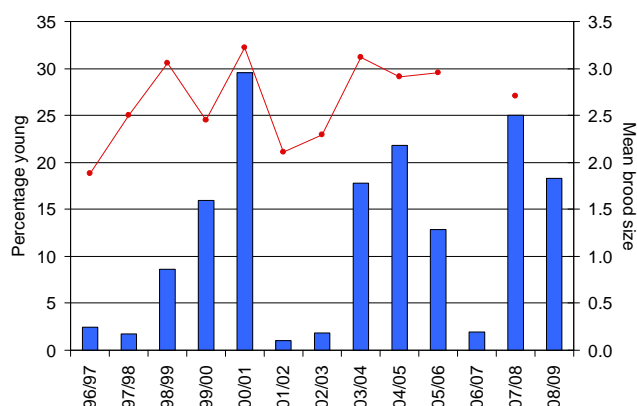


Figure 17. The proportion of young (blue columns) and mean brood size (red circles) of ECHA Light-bellied Brent Geese, 1996/1997–2008/09. No brood size data are available for 2006/07 or 2008/09.

East Atlantic Light-bellied Brent Goose monitoring in 2008/09

Lindisfarne, Northumberland, is the only site in the UK where East Atlantic Light-bellied Brent Geese can be observed in any number. Breeding success was assessed at the site in January 2009 and was the lowest recorded since records began in 1992/93 (Figure 18). A total of 768 geese was aged, of which 2.0% were young, and nine broods were recorded, with a mean brood size of 1.67 (± 0.24 SE) young per successful pair.

Results from age assessments undertaken on the Continent suggest breeding success there was higher. Counts were made at six autumn staging sites in October 2008; 2,198 geese were aged, of which 10.1% were juveniles, and 17 families were assessed, producing a mean brood size of 2.53 young per successful pair. A single age count of $\approx 1,300$ birds in January found only ≈ 50 juveniles suggesting there may have been a loss of young birds during late autumn and early winter (P. Clausen pers comm.).

Our thanks go to Steve Percival for undertaking the counts at Lindisfarne and to Preben Clausen for the information from the Continent.

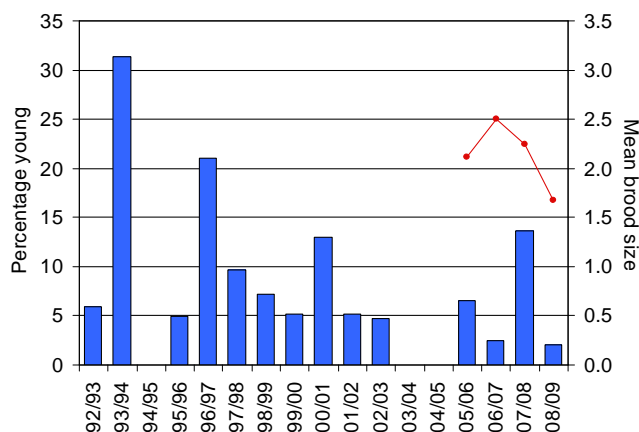


Figure 18. Proportion of young (blue columns) and mean brood size (red circles) in flocks of East Atlantic Light-bellied Brent Geese at Lindisfarne 1992/93–2008/09. Note, no data were collected in 2003/04 or 2004/05

Colette Hall

Recent success with capture and marking

Two Barnacle Goose catches were carried out on the Solway Firth, Scotland during 2008/09 by WWT and the North Solway Ringing Group. The first catch took place at WWT Caerlaverock on 24 November 2008, when 23 birds were caught and fitted with orange plastic leg rings in the series DVF to DVZ or green rings in the series ZXY to ZYD. The catch included three controls and three juveniles. The second catch was carried out at RSPB Mersehead on 23 January 2009, when 98 birds, including 21 juveniles and 15 controls, were caught. The main ring series fitted were green ZY* and ZZ* and orange DX* and DY*. Two of the birds at Caerlaverock (orange DVX and DVG) were fitted with 30g solar GPS ARGOS PTT-100 satellite tags, as were orange CNV, DXF and green XTL at Mersehead. Unfortunately, the transmitter on XTL malfunctioned and did not upload data after March 2009 although it was seen with its mate and tag still in place during

the spring migration in Norway. The progress of these birds can be followed at:

www.wwt.org.uk/research/tracking/maps.asp.

Capture of Barnacle Geese on the spring staging areas also progressed well. Paul Shimmings successfully ringed three Barnacle geese in Helgeland, west Norway in May 2009. This brings the total ringed on the spring staging areas in recent years to 39 birds, and provides an important contribution to our understanding of weight gain by geese during the critical spring-staging period. All were ringed with green rings in the BX* series.

Steve Percival reported a successful catch of Greenland Barnacle Geese on the wintering grounds on Islay, Scotland. The cannon net catch took place in October 2008 on the RSPB

reserve at Loch Gruinart and a total of 90 geese was caught. An additional 19 geese were cannon netted by Alyn Walsh and the National Parks and Wildlife Service ringing group on Inishkea Islands, Co. Mayo, Ireland in April 2009.

Greenland White-fronted Goose catching was again successful at Loch Ken in Dumfries & Galloway, Scotland. On 1 April 2009, 13 were caught - two large families comprising four adults and nine juveniles. These birds were fitted with orange neck collars and white leg rings in the series V6A to V0A and V1C to V8C. In the Republic of Ireland, the National Parks and Wildlife Service (NPWS) ringing group lead by Alyn Walsh caught a further 37 Greenland White-fronted Geese in two catches in February 2009.

At Sevenoaks Wildlife Park the annual round up of breeding geese took place in June 2009. In total, 145 geese were caught by Dartford Ringing Group, comprising 76 Greylag Geese (of which 46 were retraps) and 69 Canada Geese (including 31 newly ringed adults, 12 first year birds, and 26 retraps). All Greylag Geese were, as usual, marked with white engraved plastic rings.

Twelve successful catches of Light-bellied Brent Geese were made in Iceland and Ireland between October 2008 and May 2009. These resulted in 484 newly-marked geese from a total of 501 captured. As in recent years, catches focussed on a range of widely distributed sites around the Irish coastline. Ten birds were caught in Co. Down during the autumn by Kerry Mackie and Gudmundur Gudmundsson and a further 321 (including seven retraps) were caught by Kerry Mackie, Alyn Walsh, Alan Lauder and Stuart Bearhop at various sites in Kerry, Wexford, Waterford and Co. Down during mid- to late winter. In Iceland, successful attempts were made at three new sites along the west coast staging areas between April and May 2009. In total, 170 birds were caught in Iceland. This brings the total number of Light-bellied Brent Geese caught and marked in Iceland, Ireland and Canada since the winter of 2000/01 to over 3,100 birds, averaging around 350 per annum. The marked individuals generate around 10,000 observations annually, which have been carefully managed by Graham McElwaine. As ever, the team effort has been essential for the success of these catches; a big thank you to everyone who has helped.

Finally, swan ringing also continued throughout 2008. In total, 127 Whooper Swans were captured at WWT centres: 37 at Caerlaverock, 33 at Welney and 88 at Martin Mere. Captures of wintering Bewick's Swans were again low; only three swans were caught at WWT Slimbridge in December 2008. Numbers marked were again boosted by summer expeditions to the breeding grounds. During August 2008, a team from WWT travelled to the coast of the Pechora Sea, adjacent to the Nenetskiy State Nature Reserve, Russia, where 108 Bewick's Swans were caught and ringed. In Iceland, 302 Whooper Swans were ringed at Skagafjörður, Myvatnsheiði/Bardardalur and Jokuldalsheiði.



Larry Griffin marking a Greenland White-fronted Goose (Carl Mitchell)

The marking and resighting of these geese and swans is central to our understanding of their movements, habitat use and population dynamics. Thank you to everyone who has contributed to this work over the past year. Sightings of colour marked wildfowl are still eagerly required; all sightings can be reported to colourmarkedwildfowl@wwt.org.uk.

Jacqueline Reed

GSMP website

Much of the information on the Goose & Swan Monitoring Programme can be found on WWT's website at www.wwt.org.uk/research/monitoring. This includes more detailed information on the results of surveys for all goose and migratory swan populations, including European White-fronted Goose and Greenland Barnacle Goose, and various resources for GSMP fieldworkers, such as recording forms.

Conservation and research news

Bird Atlas 2007–11

As you read this newsletter, we will have completed the first two years of fieldwork for the Bird Atlas project and will be about to embark on the third winter. The aim of the project is to map the distribution of birds in Britain and Ireland during both the winter period (November to February) and the breeding season (April to July), based on the British and Irish 10 km grid systems. In some parts of the country, local atlases are also underway using a tetrad (2x2 km) system to map distributions.

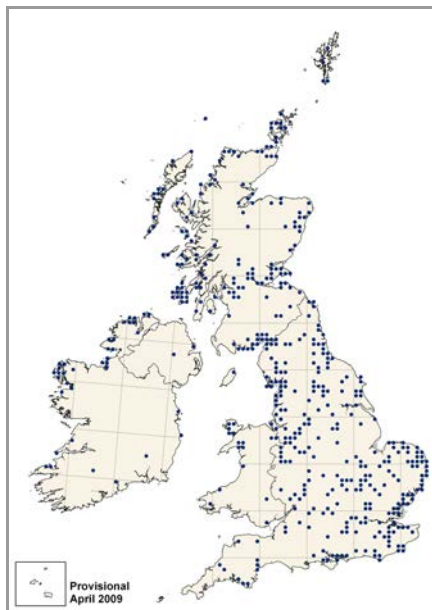


Figure 19. Provisional winter distribution of Barnacle Geese

A huge amount of data has been gathered already, but there are still lots of gaps, particularly in the remoter parts of the country. Figure 19 shows the provisional winter map for Barnacle Goose. There are probably some unrecorded sites for this species particularly in north-west Scotland and Ireland. The distribution of feral flocks is also likely to be under recorded.

So how can you help? Currently, data from goose counts or WeBS counts in general are not being automatically included in the Atlas database, as many count areas are in more than one 10 km square. It would be very useful if wildfowl counts could be added by observers as Roving Records to the Atlas database. A Roving Record consists of a 10 km square, a place name, the date and the species recorded. To submit Roving Records log onto www.birdatlas.net. On the home page you can click on the 'Submit Roving Records' button where an online form allows easy submission. If you are not online, paper forms can be obtained from Dawn Balmer at BTO, Nunnery, Thetford IP24 2PU.

Figure 20 shows the breeding season distribution of Greylag Goose, using data already gathered for the project. Numbers of this species are rapidly increasing in many parts of the country, but this is often not well documented by birders who tend to ignore what is often perceived as a 'feral' species. It is important, however, that these changes in distribution are recorded and this will be a valuable aspect of the Bird Atlas

project. During the breeding season, as well as recording basic distributions we also aim to collect evidence of breeding. This can be at one of three levels. For example, a bird in suitable habitat (code H) would indicate possible breeding, a pair in suitable habitat (code P) would be probable breeding, whilst a brood of chicks (code FL) would indicate confirmed breeding.

The aim of Roving Records is to build up species lists for each 10 km square, or where local atlases are being done, each tetrad. Each species only needs to be recorded once to put a dot on the map, though we would like it recorded at the highest level of breeding category possible. In order to find out which species are missing from a given square or tetrad, log onto www.birdatlas.net and click on the 'Any Square Summary' button, then enter the details of a 10 km square or tetrad in order to get a print out of all the species recorded so far and for each the highest recorded breeding evidence category. Any extra species, or any species that you can supply higher breeding evidence categories, should be added as Roving Records.

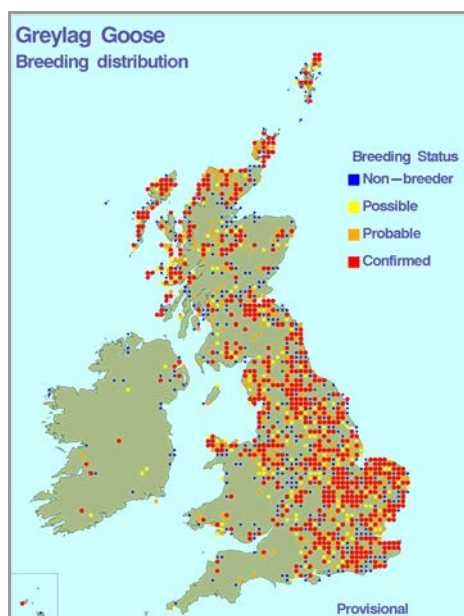


Figure 20. Provisional breeding season distribution of Greylag Geese

Wildfowl populations are undergoing rapid changes in distribution in both winter and summer as a result of both land use and climatic change. By participating in the Atlas project you can assist in the important job of highlighting these changes. Please get involved as all records are important.

Bob Swann

Goose Specialist Group News

The Goose Specialist Group of the IUCN Species Survival Committee and Wetlands International seek to strengthen contacts between all researchers on migratory goose populations in the northern hemisphere. A database with goose censuses from the Western Palearctic is supported by a network of national coordinators. Annual meetings have been held since 1995 and at present 400 people have joined the

group. The present global coordinator is Bart Ebbinge, based at the Alterra, Green World Research Institute in Wageningen, the Netherlands. Regional coordinators are Ray Alisauskas based at the Canadian Wildlife Service in Saskatoon, Saskatchewan (Canada) for North America and Masayuki Kurechi of the Japanese Association for Wild Geese Protection in Wakayanagi (Japan) for East Asia.

After a spectacular meeting in Ladakh, India in 2008 (see www.geese.org/gsg) the 12th meeting of the Goose Specialist Group will be held from 9-14 October 2009 in Höllviken, in the centre of the goose areas in southwest Sweden, about 10 km from the famous Falsterbo Bird Observatory.



Bean Geese (Goose Specialist Group)

The main theme of the conference will be 'Expanding goose populations and their management'. The organising committee will be chaired by Leif Nilsson and assisted by Barwolt Ebbinge, Tony Fox, Thomas Heinicke, Konstantin Litvin, Jesper Madsen and Petteri Tolvanen. We plan to invite some keynote speakers on this theme as well as other researchers to give an overview of developments within some important populations and other issues regarding increasing goose populations and their management. Special attention will also be given to those goose populations that are not faring so well, eg the Taiga Bean Goose and the Lesser White-fronted Goose.

Another important theme is the different marking schemes for geese and the use of the results for solving different questions. For more information about the meeting and to present an offer for a paper/poster, please go to www.zoo.ekol.lu.se/waterfowl/GSG.htm

This homepage for the 2009 GSG meeting will be regularly updated with all relevant information including registration forms and instructions for payment of conference costs.

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I hope to see many of you in Scania and Sweden.

Barwolt S. Ebbinge

Greenland White-fronted Goose International Workshop

Scottish Natural Heritage and the Greenland White-fronted Goose Study organised an international workshop on Islay to discuss the conservation of the Greenland White-fronted Goose. Held on the 24–26 February 2009, 50 experts from throughout the flyway, as well as international conservation organisations and, importantly, representatives of the local farming community were brought together to discuss the range of threats and pressures currently acting on the population. The workshop agreed and prioritised necessary conservation actions which will be included in a proposed international action plan for the population.

The meeting reviewed the past 30 years of conservation actions for the geese, notably the progressive protection from hunting in the four Range States, the development of national networks of protected areas, and resolution of conflicts with agriculture, especially on the wintering areas. However, new threats are emerging which are currently causing the population to decline rapidly. The workshop assessed these threats and made recommendations for necessary research and conservation actions throughout the flyway that could halt the decline.

The workshop programme included a session on managing wintering sites for Greenland White-fronted Geese and an evening slideshow that were both open to the public. In addition, a number of the meeting participants visited four of Islay's primary schools to explain about the life of the geese when they are away from Islay, current threats and the need for an international workshop. This educational component was an important part of the planning of the workshop and was well-received locally. Each child was given a conference t-shirt which showed the international flyway and localities where a typical Islay Whitefront would be found each month of the year – laid out as a 'tour list'.

Following the consultation on the international action plan at the workshop it is hoped that it can now be rapidly finalised. This will enable necessary measures to be put in place that could halt the current decline. Outputs from the workshop, most notably the action plan, will be used by SNH to identify additional tasks to be carried out in Scotland and finalise the species implementation plan as part of the Species Action Framework.

Further information on the workshop can be found at gwfg-conservation.wikispaces.com where updates on progress towards the international plan will be posted.

David Stroud

Conservation and research news

Use of satellite-tracking technology to describe the migration routes of Icelandic Whooper Swans in relation to current and proposed wind farm sites

In its strategy for tackling climate change and securing energy supplies – the Energy White Paper of May 2007 – the UK Government set out several initiatives for the increased use of renewable energy sources including wind power. The resultant rapid development of wind farms is causing concern about their potential impact on wildlife, however, particularly for birds where the proposed wind farm is located in areas of importance for the population or species. Efforts therefore are being made to minimise the impact of wind farm development on bird populations, by developers and conservation organisations working together to determine the most suitable locations for the turbines.

Britain and Ireland are the main wintering grounds for several Icelandic-breeding waterbird populations, such as Whooper Swan, Pink-footed Goose and Greylag Goose. Given the birds' distribution, it seems likely that several current and proposed offshore wind farms are located along their migratory flyways, but whether individuals need to negotiate just one or several major wind farms during migration has yet to be determined. Although counts and ring-reading provide good information on summer and winter distribution, remote sensing is required to provide fine-grained information on the migration route. WWT's satellite-tracking of Barnacle Geese, Greenland White-fronted Geese and Light-Bellied Brent Geese has already shown that they migrate through proposed wind farm locations. This information is important for environmental impact assessments (EIAs) because of the potential for a cumulative effect where several wind farms are installed along a flyway.

In winter 2008/09, WWT therefore embarked on a project funded by COWRIE (Collaborative Offshore Wind Research into the Environment; see www.offshorewindfarms.co.uk/Pages/COWRIE) using the latest satellite-tracking technology to describe the Whooper Swans' migration routes in relation to strategic offshore wind farm areas along the British coastline. There is particular concern about the potential impact of wind farm development on migratory swans because their large size makes them less manoeuvrable than other smaller birds, increasing the risk of these animals flying into the turbines. The main aim of the study is to determine the swans' unmapped flight paths through the Greater Wash and the East Irish Sea, where off-shore wind farms have been installed or are scheduled, in order to provide information on areas sensitive for this species. The altitude of flight is also being addressed, because geese and swans tend to fly at low altitudes during migration, which may increase the risk of collision with the turbines, especially in conditions of poor visibility such as rain, fog and night-time migration.

Forty Whooper Swans were fitted with solar-powered GPS 70 g satellite-tags in Britain in winter 2008/09 to determine their spring migration routes from sites of international importance for the species: 20 at WWT Martin Mere, Lancashire; 15 at WWT Welney, Norfolk and five at WWT Caerlaverock,

Dumfriesshire. The tracking of swans from Martin Mere and from Welney will also serve to provide, for the first time, detailed information on the routes taken to the southern parts of their migratory range. A further ten transmitters to be fitted in Iceland in summer 2009 will provide data on the swans' autumn migration in 2009 for swans known (from ring re-sightings) to winter at these sites. The migration routes and flight patterns (including altitude of flight) will be analysed in relation to current and potential wind farm locations in off-shore Britain and prevailing weather, particularly periods of poor or adverse conditions. Because the welfare of the birds is of paramount importance, an engineer was commissioned to produce a special plastic base-plate for mounting the 70 g units from a WWT design, based on the experience gained by WWT staff from earlier satellite-tracking studies.



Whooper Swans fitted with satellite tags (Kane Brides)

By May 2009, 34 of the tagged swans were known to have flown from Britain to Iceland, with the tags producing high quality data on the swans' migration routes and summer quarters in Iceland. One transmitter was removed because the housing was damaged and at least one bird is thought to have lost its transmitter. The highly detailed GPS data will also allow the home range characteristics, and the feeding and roosting requirements of individual swans to be analysed for their wintering grounds and spring staging sites. As with previous tracking projects, WWT has encouraged local schools to get involved by championing the swans. Information on the swans' movements is being published live on the WWT website, on whooper.wwt.org.uk/whooper, to provide up to date information on their migration to all interested parties.

Eileen Rees & Larry Griffin

Tracking marked geese over continental Europe

A special website www.geese.org has been developed to allow observers of marked geese to enter details of their observations online. Within the website one can choose between three different languages: English, Dutch and German. There is a general section open to everyone, and a section only accessible to registered observers. This latter section allows each observer access to observations of the geese they have observed. The exact locality where one observes a goose has to be entered using Google-maps.

The website now handles projects for seven goose species, of which one is of particular interest for British observers: the Dark-bellied Brent Goose. See the example of a Dark-bellied Brent (Figure 21) ringed in November 1996 at the Exe Estuary and subsequently observed near Southampton, along the Essex coast and on spring migration in Schleswig-Holstein, Germany.

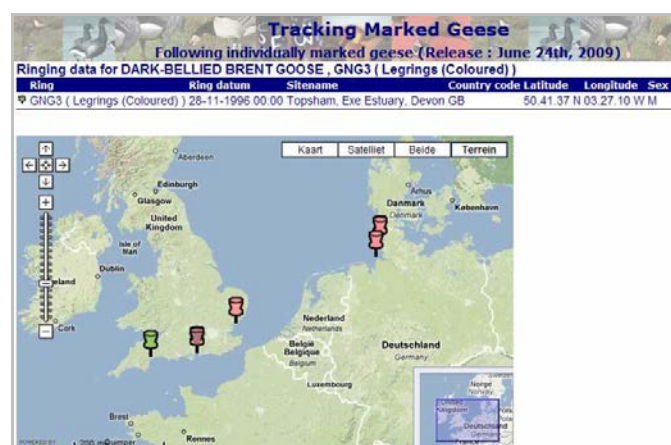


Figure 21. Resightings of Dark-bellied Brent Goose (GNG3; green N left leg, green 3 right leg).

The other six species are: Greylag Goose (Scandinavian, Dutch and German neck banding schemes), Greater White-fronted Goose (Dutch, German, Russian and British neck banding schemes), Bean Goose (German, Dutch, Russian and Scandinavian ringing schemes), Dark-bellied Brent Goose (Dutch, English, German, French and Russian ringing schemes), Barnacle Goose (Dutch, Swedish and Russian ringing schemes), Canada Goose (Dutch neck banding scheme), and more recently Svalbard Pink-footed Goose (Danish neck banding scheme).

Also, birds from some of these other goose populations do turn up in Britain, like a Tundra Bean Goose with a yellow neckband, which was ringed in December 2002 along the River Meuse in the Netherlands, and subsequently observed in Germany, Poland, Estonia, but also in East Anglia.

Registered observers can enter their sightings of geese marked with engraved colour-rings or neck bands and get feedback about where these marked birds were ringed and spotted by other observers. If the bird you have seen matches an existing bird in our database you can immediately find the ringing information as well as information about other sightings of this same bird plotted on a map.

In December 2008 we had ringing information of over 36,000 individually marked geese in the database (Figure 22) and had received over 800,000 resightings of these birds.

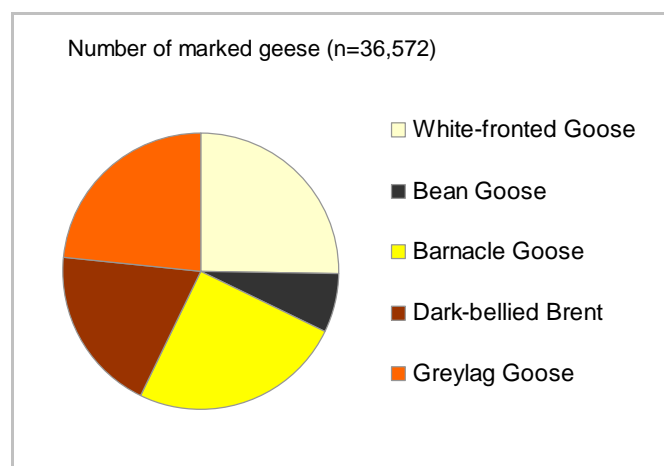


Figure 22. The number of individually marked geese in the database of www.geese.org; also includes 24 records of Canada Goose.

In December 2008, the total number of registered observers was 1,690, of which 95 (6%) were British. Britain comes third out of 26 countries from which we have received observations. The highest number was submitted from The Netherlands (44%) followed by Germany (33%).

Special care is taken to collect the data in such a way that their reliability can be checked. Most observers are, of course, extremely accurate, but we all make mistakes, especially when visibility is poor and we have to strain our eyes to read the inscriptions through our telescopes. In order to analyse the data for scientific purposes (for example, estimating annual survival rates) we have to know how many mistakes are being made. Sometimes only typing errors are made, and these can be corrected after checking with your original field notes. Sometimes the ringers make mistakes while sexing the birds, and experienced observers who can identify the sex of a bird in the field, can thus also help to update and improve the quality of our ringing database. All primary sightings you enter will be stored forever, so that even after updating we can still get some idea about how accurately you are working, which is essential to judge the quality of the collected data. Further improvements to this website are continuing to be made.

If you are an observer of marked geese and interested in this website, please do visit and register as an observer using the special registration form. We hope you will find this a helpful and interesting way in which to report your sightings and receive feedback about those birds you have observed.

Barwolt S. Ebbinge

on behalf of

Helmut Kruckenberg, Henk van der Jeugd, Berend Voslammer, Leif Nilsson, Jesper Madsen, Gerard Müskens, Yke van Randen, Onno Roosenschoon & Thomas Heinicke.

Conservation and research news

Birds of Conservation Concern 3

The fourth major review of the status of birds in the UK, Channel Islands and Isle of Man was recently completed. *Birds of Conservation Concern 3* presents Red, Amber and Green lists of conservation concern based on assessments of criteria such as global conservation status, historical population decline, recent population decline (numbers and geographical range), European conservation status, rarity, localised distribution, and international importance of populations.

Of 246 species assessed, 52 (21.1%) were placed on the Red list, 126 (51.2%) on the Amber list and 68 (27.6%) on the Green list. Eighteen species moved onto the Red list since the last assessment in 2002, and six moved from Red to Amber. Among geese and swans, all but two species qualify as Amber, most because of either their internationally important UK winter populations, or their localised nature at this time of year. The remaining two species, Mute Swan and White-fronted Goose (includes both *albifrons* and *flavirostris*), qualified as Green. For the latter species, this is an anomaly of numbers since separately, both populations are declining. However, BoCC3 assessments were also carried out at the sub-specific level for the first time, and this placed four sub-species in a higher category than their species, including both populations of White-fronted Goose (see table below). For three of these this was because the sub-species met the criteria for the IUCN Red List, and for the fourth (*albifrons* White-fronted Goose) it was because of a severe (>50%) decline in the non-breeding population.

	BoCC2	BoCC3	
		Species	Sub-species
Mute Swan	Amber	Green	Green
Bewick's Swan	Amber	Amber	Amber
Whooper Swan	Amber	Amber	Amber
Bean Goose <i>fabalis</i>	Amber	Amber	Red
Bean Goose <i>rossicus</i>			Amber
Pink-footed Goose			Amber
White-fronted Goose <i>albifrons</i>	Amber*	Green	Red
White-fronted Goose <i>flavirostris</i>	Amber*		Red
Greylag Goose	Amber	Amber	Amber
Barnacle Goose	Amber	Amber	Amber
Brent Goose <i>bernicla</i>	Amber	Amber	Red
Brent Goose <i>hrota</i>			Amber

* Highlighted separately in Amber table

The full BoCC3 was published in the June 2009 issue of *British Birds*, and can be downloaded from www.britishbirds.co.uk. A glossy summary booklet is also available, and can be found at www.wwt.org.uk/research/monitoring/indicators.asp.

Richard Hearn

Greylag Geese on Orkney – marking the issue...

The numbers of Greylag Geese in both the summer (c 10,000 birds) and winter (c 70,000 birds) are increasing on Orkney. Consequently, the species is also becoming a political issue there and as a result, the Scottish Government's Goose Science Advisory Group (GSAG) has identified the capture and marking of Greylag Geese as a priority because little is known about the movements of summering birds after the breeding season. Also, no catching has been undertaken on Orkney during the winter months when the summer population is joined by winter migrants from Iceland. The degree of mixing of the two populations is also unknown.

In 2008, an increase in effort was put into marking the breeding population. The main aim of this project is to increase our knowledge of the distribution and movements of these breeding birds and build up individual life histories including annual breeding success. The season started with a couple of lucky breaks resulting in a few birds being caught by hand and marked on the Pentland Skerries and Loch of Swannay, Birsay. Loch of Hundland was identified as a site to try to catch birds by rounding up moulting adults and flightless goslings. In July 2008, 124 birds were successfully marked at this site and we will attempt further catches there as long as it remains a hotspot for gathering post-breeding birds. Already the results of the project have been interesting with the majority of sightings being from within a 10 km radius of the ringing site - which was perhaps to be expected from this presumed sedentary population.

However, two goslings have already decided to make things more interesting by wintering in East Anglia (790 km to the southeast); a movement few would have predicted. However, the story continues with both birds returning to their natal grounds at Durkadale, Birsay, Orkney in early April 2009 where they remained until at least the end of the month.

Orkney Ringing Group has been successful in obtaining a grant from Scottish Natural Heritage to enable this research to be continued in 2009–2012. The aim of this new project is to capture up to 100 birds in the summer and 100 Iceland birds in the winter over the next four years. The distribution and movements of marked birds will provide conservation bodies with important information to assist with the management of the Greylag Goose populations in Orkney in the future.

Birds are marked with either an orange neck collar with three characters or a white plastic leg ring with three black characters. As ever, we would be delighted to receive sightings including the following information: collar or leg ring colour & code, mate and number of goslings, flock size, location, grid ref, and habitat. Sightings of marked Greylag Geese seen on Orkney can be sent directly to alan.leitch@rspb.org.uk. Sightings of marked Greylags elsewhere in north Britain should be sent to robert.swann@homecall.co.uk.

Alan Leitch

Blood lead levels in wintering and moulting Icelandic Whooper Swans

Merita O'Connell and co-authors recently published their work on blood lead levels in Icelandic Whooper Swans (*Journal of Zoology* 276: 21–27). The paper presents the results of 363 blood samples taken at wintering sites in Britain and Ireland and moulting sites in Iceland between 2001 and 2005 and compares these to data collected in the late 1980s. Analysis revealed blood lead levels were generally lower in swans on the moulting grounds in Iceland; only 6% of samples had elevated lead levels. Between 43% and 70% of swans on the three wintering sites monitored had elevated lead levels; the highest levels were in samples from swans in Scotland. However, a marked decrease in lead levels measured in swans at the same wintering sites over two decades ago was observed. The proportion of swans with elevated lead levels in Iceland decreased from 60% to 8% between 1984 and 2005, although this decrease could, in part, be attributed to different sample sites being used to catch swans.

The timing of migration in two Arctic-nesting goose populations

In their recent paper, Ingunn Tombre and co-authors (*Journal of Avian Biology* 39: 691–703) examined how spring conditions influenced the timing of migration of the Svalbard populations of Barnacle and Pink-footed Goose. Long term datasets of arrival and departure dates at a variety of sites were correlated with the onset of spring at pre-migration and spring staging sites. Their findings suggested that the response of both populations to changes in the timing of spring depends heavily on the migration strategy employed. Pink-footed Geese, which stop at several sites during migration, migrated earlier in years when spring was early. The onset of spring at each consecutive

stop-over site used along the migration route was also positively correlated. In the case of Barnacle Geese, which have a long crossing over the North Sea, there was no indication that migration took place earlier in years with earlier springs. Although spring advanced at both their UK wintering sites and spring staging sites in Norway, there was no correlation in the onset of spring between the two areas. The authors concluded that the ability of geese to respond to the advancement of spring depended on whether the conditions at one site could indicate the conditions they may experience at the next site.

New research shows spring-staging geese habituate to wind farms

The long term effects of wind farms on the distribution of wildfowl populations have rarely been studied. However in a recent study, Jasper Madsen and David Boertmann (*Landscape Ecology* 23: 1007–1011) showed that over a ten-year period spring staging Pink-footed Geese habituated to wind farms. In a study between 1998 and 2000, field use by Pink-footed Geese was measured by counts of droppings at three wind farms in west Jutland, Denmark. Initially, geese were found to keep a distance of 100–200 m from the wind farms and didn't use the area inside the wind farm. Repeating this study in 2008 at the same three wind farms found that at all farms the avoidance distance had decreased by at least 50%. At one of the three wind farms the geese were now found to forage within the wind farm area. As land use and agricultural practices had remained constant over the ten years and the population density of geese within the area had not significantly increased, the authors concluded that the geese had altered their behaviour to adapt to the creation of the wind farms. Differences between the three study sites were thought to be due to differences in the size of turbines.

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Goose Specialist Group proceedings published

The proceedings of the 10th meeting of the Goose Specialist Group, held in Xanten, Germany, in January 2007 have now been published as a special volume of *Die Vogelwelt*.



I would like to thank the editorial team (Johan Mooij, Regina Müller and Paul Schnitzler) for their hard work in accomplishing this great achievement. All participants of the Xanten meeting have already been sent a copy, but a few more are available at a cost of €30 (excluding postage) for interested people who could not attend the meeting.

If you are interested in obtaining a copy, please contact Johan Mooij (johan.mooij@t-online.de).

Barwolt S. Ebbinge

Compiled by Carl Mitchell

Designed and typeset by Colette Hall

Printed on Elemental Chlorine Free paper primarily manufactured from 80% de-inked post-consumer waste

Published by WWT, Slimbridge, Glos. GL2 7BT, UK

Wildfowl & Wetlands Trust (WWT) registered charity in England & Wales, no. 1030884, and Scotland, no SC039410

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Goose & Swan Monitoring