



## Monitoring change in the fortunes of winter goose populations

The getting up early is often the hardest part of counting a goose or swan roost. The habit of geese and swans using waterbodies for roosting then flying at first light to feeding grounds means counters need to be a dedicated and hardy bunch. Early starts and cold conditions are often the norm. But once up and at the roost, the sight and sounds of flocks of geese and swans waking and taking to the wing is often a just reward. The regular Counter Profile feature hopefully captures some of the reasons why counters appear to be willing to commit to counting their local patches over many years. In this edition, Frank Mawby, former warden on the Solway, explains some of experiences he's had counting geese there over the past thirty years (page 12).

Allan and Lyndesay Brown share some of their experiences of organising IGC counts in south east Scotland and provide useful reminders of the requirements for counting roosts and the need to keep in touch with area organisers (page 7). A commitment to regular monitoring can seem daunting and repetitive, but on certain days, flights of geese can be very rewarding. The regularity of monitoring is important as it allows us to be confident in observed trends; none more so that the decline in numbers of the Greenland White-fronted Goose. Government wildlife bodies rely on up to date information on abundance and distribution and the efforts of volunteer counters have enabled several recent conservation efforts to be initiated to try to learn more about the population dynamics of this population. Mitch Weegman introduces a new PhD study that aims to investigate the causes of the low breeding success of the Greenland White-front (page 6).



European White-fronted Geese (James Lees)

Whilst goose and swan monitoring has typically focussed on monitoring abundance and annual breeding success, the feeding areas of these birds in the wider landscape has received little attention away from a handful of intensive localised studies. A recent project has pooled distribution data from a variety of sources to map the Scottish feeding grounds of Pink-footed and Iceland Greylag Geese (page 9). It is hoped that by encouraging goose and swan counters to contribute feeding data to *BirdTrack*, a better picture of the distribution of these birds can be established in the future.

Change can often be slow; populations may increase over time, others decrease; certain roosts become more important whilst others slowly become abandoned, but, every now and then, something happens that is out of the ordinary. On 12 November 2011, a flock of 38 whitefronts were seen near Kingussie, Scotland. Initially, it was assumed that they were from the Greenland population since a small number of these had irregularly wintered in this area in recent years. How wrong we were, since the sightings heralded a remarkable influx of European White-fronted and Tundra Bean Geese into Norway, Denmark and Britain. The days that followed saw a steady arrival of both species across many parts of Britain, and particularly on the east coast. The timing of the sightings suggests that the arrival was over a prolonged period rather than a spectacular 'fall' driven by a particular weather event. In Scotland alone, an estimated c. 3,220 European White-fronted Geese at 108 sites and c. 1,350 Tundra Bean Geese at 103 sites were counted.

The cause of the influx remains a mystery. Weather conditions, particularly the strength and direction of wind in the week preceding 12 November and the week that followed, did not reveal any indications of strong south easterlies or easterlies ([www.wetterzentrale.de/topkarten/tkfaxbraar.htm](http://www.wetterzentrale.de/topkarten/tkfaxbraar.htm)) which may

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have aided a rapid influx. Nor was the arrival related to a cold weather movement; weather charts for early November suggest a period of relative calm prior to the first arrivals. A high pressure system was sitting over the southern Baltic Sea area on 11 and 12 November providing only light south easterlies across the continental part of the North Sea coast. However, weather records from Terschelling (an island on the northwest coast of The Netherlands, 53.38N 5.35E) reported fog on 8, 9 and 10 November. Could a combination of fog and light south easterlies be sufficient to have caused a drift of European White-fronted Geese to the north and west over the North Sea?

However, this does not explain the staggered arrival of the Tundra Bean Geese. Thomas Heinicke (Germany) suggested that the influx of Tundra Bean Geese into Norway comprised birds most likely from northern Scandinavia and northwest Russia and that, based on the timing of the sightings there, the influx could easily have continued into Britain. This might explain the early records from Shetland, Caithness and the Outer Hebrides, for example. So, perhaps Britain witnessed influxes on two fronts: a drift of European White-fronted Geese across the North Sea from The Netherlands/Germany and an unusual movement of Tundra Bean Geese from

northern Scandinavia and northwest Russia, southwest into Norway and continuing on into Britain.

Unusually, many flocks of European White-fronted and Tundra Bean Geese in winter 2011/12 remained until well into early spring. There will be considerable interest next autumn to see if any of the long-staying wintering birds of 2011/12 return to their British wintering areas. For the first-winter geese which arrived in autumn 2011, Britain is now their 'normal' wintering area. Goose counters in particular are thanked for their dedication and enthusiasm for taking the time to report these unusual migrants.

Finally, it is with great sadness that we heard that Stan Laybourne died in May. Stan was the IGC coordinator for Caithness and devoted much of his spare time and retirement to counting birds in the county (see Counter Profile in issue No. 10 of *GooseNews*). He will be particularly remembered for his passion for his beloved Greenland White-fronted Geese. Stan will be missed by Scottish ornithology, as well as his family and friends.

Carl Mitchell

## Many thanks for all your help

The greatest strength of the Goose & Swan Monitoring Programme (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***

*GooseNews* is the newsletter of WWT's GSMP. 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*, including past editions, is also available to download from WWT's website at [monitoring.wwt.org.uk/reports.php](http://monitoring.wwt.org.uk/reports.php).

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

### **GSMP website**

Much of the information on the GSMP can be found on WWT's website at [monitoring.wwt.org.uk/goose\\_and\\_swan.php](http://monitoring.wwt.org.uk/goose_and_swan.php). This includes more detailed information on the results of surveys for all goose and migratory swan populations, and various resources for GSMP fieldworkers, such as recording forms.

# Survey dates for 2012/13

## Icelandic-breeding Goose Census

Count forms for the autumn 2012 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. After consultation, the following dates were chosen for coordinated counts in autumn 2012:

**13/14 October, 10/11 November and 8/9 December**

Please remember that, ideally, all sites supporting Pink-footed Geese should be covered during the October and November counts, whilst those holding Iceland Greylag Geese should be counted in November and December counts. There are still a small number of sites where both species occur. In these cases, please try to count in all three 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 28 for contact details).

If you are unable to count on the above 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 at those sites where British Greylag Geese occur. September counts are not strictly coordinated but should be carried out during the middle 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 [monitoring.wwt.org.uk/reports.php](http://monitoring.wwt.org.uk/reports.php)).

Counters are reminded that IGC count forms should be returned to their Regional Organiser (if appropriate) or directly to Slimbridge as soon after the last count date as possible. This helps speed the collation of counts for the production of web updates and *GooseNews*.

## 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, or by email to [colourmarkedwildfowl@wwt.org.uk](mailto:colourmarkedwildfowl@wwt.org.uk).

A new online reporting system for colour-mark records for WWT projects is being developed. See the article on page 11 for more information.

Further details of other colour-marking projects can be found on the EURING colour-marking website ([www.cr-birding.org](http://www.cr-birding.org)).

## Age assessments

Age assessments will continue during 2012/13 as usual. The survey periods vary between species and are shown below.

| Population                                   | Period            | Notes                               |
|--|-------------------|-------------------------------------|
| Whooper Swan                                 | Oct – Jan         |                                     |
| Bewick's Swan                                | Nov – Feb         |                                     |
| Iceland Greylag Goose                        | Oct – mid Nov     | care needed with age identification |
| British 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 (both populations)            | Oct – Dec         |                                     |

## Illegal shooting of Bewick's and Whooper Swans

Among the various threats facing our migratory swans, it is those caused by Man that are the most concerning, yet perhaps the least surprising. Bewick's Swan *Cygnus columbianus*, which breeds on the tundras of arctic Russia and the Icelandic Whooper Swan *Cygnus cygnus* population are both legally protected from hunting throughout their migratory ranges under national and international legislation. Yet despite this protection, a recent study has shown that many of the swans wintering in Britain carry shotgun pellets in their bodies, indicating that they have been shot at illegally (Newth *et al.* 2011).

The study used X-rays taken of healthy live birds caught and released at wintering sites in England and Scotland over four decades (from the 1970s to the 2000s) to detect pellets embedded in their body tissues (Figure 1). Overall, 13.6% of Whooper Swans and 31.2% of Bewick's Swans were found to have embedded pellets. The figure for Bewick's Swans was similar to that recorded for quarry species; for instance, a study made of live Pink-footed Geese *Anser brachyrhynchus* in Denmark found that 36% carried pellets (Madsen & Noer 1996).

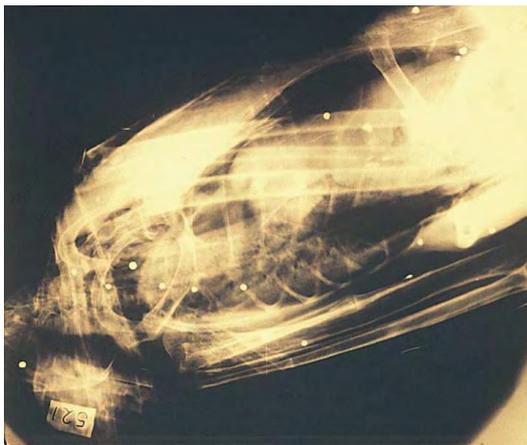


Figure 1. X-ray of the Bewick's Swan named 'Pie', which had 21 pellets in its body tissues (WWT).

The higher level of shooting pressure on the Bewick's Swans is perhaps not surprising, given that their migration is longer than that of the Whoopers. Furthermore, most of the Bewick's Swans' migration is over land, whereas the Whooper Swans' relative short migration includes a 500 km flight over the Atlantic Ocean where they are not exposed to any shooting. The likelihood of being shot appeared to increase with age for both species, with more adult birds being found with pellets than yearlings and cygnets (43.2% of adult Bewick's Swans and 16.3% of adult Whooper Swans carried pellets). Although young birds identified by their 'more goose-like' grey plumage may perhaps be targeted, the higher proportion of older birds carrying pellets in their tissues probably reflects their greater distances travelled and time exposed to illegal hunting.

It would seem reasonable to assume that if some of the swans carry embedded pellets, then others have undoubtedly been

killed by illegal shooting. Indeed, over the years, Bewick's Swans ringed by WWT have been recovered and reported as 'found shot' in Britain, Russia, Estonia and Latvia. In addition, shooting is likely to cause wounding in birds which do not instantly die. It is not yet clear whether wounding affects the long term survival of Whooper or Bewick's Swans, but Pink-footed Geese carrying pellets in their tissues have lower survival rates than non-carriers (Madsen & Noer 1996).

Both species have been legally protected from hunting throughout their migratory ranges under national legislation for many years (*e.g.* since 1885 in Iceland, 1954 in the UK, 1964 in Russia and 1979 in the Republic of Ireland), and for most wintering areas this was augmented in 1979 by the EU Birds Directive, which introduced new levels of international obligation with respect to protection. However, the 1980s saw the highest levels of shooting pressure, with 38.8% of Bewick's and 14.5% of Whoopers found with embedded pellets. The proportion of Bewick's Swans found to have been shot varied over the decades but remained high throughout the study. The good news is that shooting pressure for this species has apparently declined since the 1980s, indicating that compliance with legislation has improved. However, with 22.7% of Bewick's Swans recorded with shot between 2000 and 2008, current compliance is still poor (Figure 2). The news is also concerning for Whooper Swans, with levels of illegal shooting changing little between the 1980s (14.5% of birds recorded with pellets) and the 2000s (13.2%).

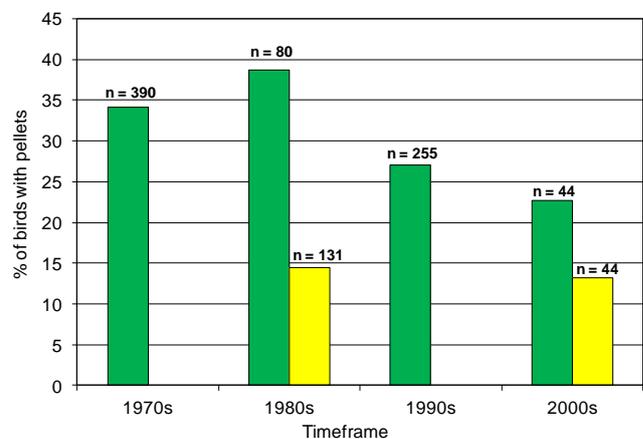


Figure 2. Incidence of shotgun pellets in Bewick's (green columns) and Whooper Swans (yellow columns). Note, no data for Whooper Swan in the 1970s and 1990s).

Illegal shooting is clearly still a threat for both species although exactly where these birds are being shot is rather more difficult to ascertain. The Bewick's Swan follows a long, although relatively narrow, migration route that crosses many international boundaries as they fly along the arctic coast of Russia to the White Sea, then head southwest across Karelia to the Gulf of Finland and along the northern and southern shores of the Baltic, before arriving at wintering sites in Northwest Europe (mainly in The Netherlands and Britain). The complexity of this journey makes it difficult to identify shooting hotspots and serves to emphasise that illegal shooting needs to be addressed both nationally and internationally.

Although levels of illegal shooting were far lower for the Whooper Swan, it is perhaps more remarkable that 13.6% were found with pellets given their shorter migration, and that the geographic range for this population extends to just three main countries: the UK, Republic of Ireland and Iceland. Shot birds have been recovered in all three countries, again serving to emphasise that this threat needs to be tackled throughout their flyway.

Illegal shooting is of particular concern for swans as they are long-lived and slow to mature and therefore sensitive to increases in adult mortality. This is of most significance to the conservation of the Bewick's Swan population because its numbers declined by 27% between 1995 and 2005, from 29,277 to c. 21,500 birds (Beekman 1997, Rees & Beekman 2010). A number of factors are likely to be contributing to this decline, but habitat changes and illegal/accidental shooting have been identified in the International Single Species Action Plan (Nagy *et al.* 2012) as important existing threats.

In response to this continued threat, WWT, the Federation of Associations for Hunting and Conservation of the EU, the African-Eurasian Waterbird Agreement and Wetlands International are working together to reduce the illegal shooting of migratory swans across their flyways, through a collaboration of members of the hunting and farming communities, conservation groups, and governmental and non-governmental agencies. This will involve a range of approaches, but in the first instance, seeks to understand the issues leading to the illegal shooting of migratory swans in different areas and to identify potential hotspots of shooting activity, in order to determine best practices for addressing the issues. Importantly, it also aims to increase public awareness and to engage with

## East Atlantic Light-bellied Brent Goose population falls below 6,000 birds

In the most recent Waterbird Population Estimates (version 5), launched by Wetlands International at the Ramsar Convention Conference of the Parties in Bucharest, Romania in July 2012, the East Atlantic population of Light-bellied Brent Geese was listed with a population estimate of 7,600 birds, a figure that is based on the most recent review of the status of goose populations in the Western Palearctic (Fox *et al.* 2010). The review notes that this particular population – breeding in the high Arctic on the Svalbard archipelago and north Greenland, and wintering on either side of the North Sea – is one of few goose populations in Europe that has an unfavorable conservation status. Unfortunately, there are quite alarming signs that this recognised cause for concern continues and is getting worse.

The population is normally monitored during the internationally coordinated mid-January goose counts. Usually this is a relatively easy task, because the vast majority of birds are found around Lindisfarne in Northumberland and on a handful of wintering sites in Denmark, with smaller numbers wintering on the Moray Firth and Eden Estuary in Scotland. However, the distribution of the geese during the last three winters has been affected by heavy snowfalls and frost in early winter in Denmark, and many birds have left the country in response to these adverse weather conditions to irregularly used

local authorities and communities across the flyways. For any chance of success, action must be taken at all levels, from the governmental to the grass-roots, both nationally and internationally. We can all take responsibility to secure the future of our migratory swans.

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Julia Newth

sites in other parts of Denmark, Germany, The Netherlands and the UK. Hence, deriving a reliable population estimate for these most recent winters has been quite troublesome.

There is also a countrywide survey in Denmark in early May, when the whole population is found in that country, and the May 2012 count revealed quite low numbers. We therefore decided to repeat the effort later in the same month to get a second estimate. The first count on the first weekend in May gave a total of just under 5,800 birds. The second count on 24–25 May only gave 5,094 birds, but this count was undertaken after 471 birds had been reported on their northbound migration in Norway on the morning of 24 May. Combining these counts gave a population estimate of only 5,565 birds. As we believe all Danish spring staging sites are known (and observations from more unusual locations would usually be detected and reported through the citizen science portal [www.dofbasen.dk](http://www.dofbasen.dk) run by BirdLife Denmark) this gives quite strong evidence that the population has fallen under 6,000 birds in recent years. The reason behind this development is most likely due to a combination of poor breeding success in the last decade (only 9.7% goslings on average during 2000/01–2011/12, compared to 13.8% in 1990/91–1999/2000, and 14.6% in 1980/81–1989/90) and elevated mortality during cold continental winters (see Clausen *et al.* 1998, 2001).

# Articles

At the Department of Bioscience, Aarhus University in Denmark we are working intensively to find the reasons behind the lowered breeding success. One possibility might be lower body mass following shifts to agricultural crops after losses of preferred seagrasses (as found in autumn/winter; Clausen *et al.* 2012), but it needs to be established if this is carried over to spring, and hence affects the mass of individuals at departure for spring migration and potentially subsequent breeding success. Other possible problems might be found in the Arctic breeding quarters in the form of phenological mismatches (spring advancing faster in the north than in the south), increased competition with the expanding Svalbard breeding populations of Barnacle and Pink-footed Geese, or altered predation patterns.

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**Preben Clausen, Kevin Kuhlmann Clausen, Tony Fox, Stefan Pihl & Marie Silberling Vissing**

## Tracking the fortunes of the Greenland White-fronted Goose – a new PhD study

After a period of increase, the Greenland White-fronted Goose *Anser albifrons flavirostris* population has declined markedly since the late 1990s due to consistently low breeding success in recent years. In 2006, the hunting of Greenland White-fronts was banned in Iceland, yielding complete protection throughout their annual cycle (other than in England and Wales), which has helped halt the decline, but the cause of the low breeding success continues to puzzle researchers. Greenland White-fronted Geese breed in west Greenland, stop-over during autumn and spring in Iceland and winter in Ireland and western parts of Britain. The purpose of my PhD – a collaboration between the University of Exeter, WWT and the Greenland White-fronted Goose Study (GWGS) - is to better understand the reasons for the population decline and in particular, the low rates of reproductive success.

One approach is to examine decisions made by individual birds throughout the year and ultimately link these decisions to reproductive output in successive years. Greenland White-fronted Geese are unique among wildfowl in that less than 5% of geese marked in their first winter ever breed. It is this enigmatic portion of the population I wish to further examine. In addition, I hope to gain an important insight into the reasons why the other 95% of birds never breed, but still migrate to Greenland each spring. Fortunately, collaborators in Ireland and Britain have maintained a long-term database of resightings of marked individuals and counts of all known regular wintering resorts since 1982, so there is a wealth of historical data to analyse.

Flock sizes have fluctuated at most wintering resorts since counts began, although the mechanism behind this is not understood. Curiously, the large White-front flock at Wexford, Ireland, has remained relatively stable since the early 1990s, despite an overall declining population size, in contrast to the numbers on Islay, west Scotland, where numbers more than doubled, but have now fallen back to the same levels as in the

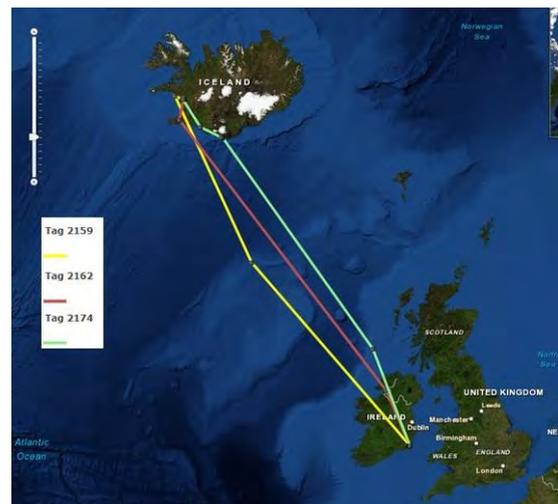


Figure 3. Tracks from three Greenland White-fronted Geese tagged in Wexford, Ireland in March 2012. Each point represents one day. Data were downloaded near Hvanneyri, Iceland in April 2012.

late 1980s. By analysing these data, I hope to help explain variation in flock sizes and specific strategies of breeding birds.

To examine behaviour of individuals and how this affects their propensity to breed, this past winter (2011/12), I began fieldwork in Ireland and Scotland where 20 GPS/accelerometer tags were fitted to male Greenland White-fronts. The tags record one GPS fix per day and an electronic trace of movement in three dimensions that enables behaviour to be recorded every six minutes for up to one year (*e.g.* Figure 3). Data is downloaded remotely to a base station with antenna from 300–500 m. This fine-scale behavioural data will provide new insights into individual strategies of birds. Another important portion of my work was observation of social interactions between family groups. It is thought that larger family groups enjoy access to the highest-quality food and habitat throughout the year, therefore potentially contributing the greatest number of young annually to the population. Over

the next few years, I would like to better explain the advantages of membership of large family groups, while also detailing the potential costs of newly established pairs splitting from their respective parents.

While family group size may be very important to breeding success, overall condition of birds and food availability during migration is something ornithologists have pinpointed for many years as fundamentally important for population stability. Beginning in the mid-1980s, studies of staging Greenland White-fronted Geese have taken place at Hvanneyri, western Iceland, home to the Agricultural University of Iceland and one of the most important staging areas for the geese as they prepare for the migration onward to Greenland. To determine overall condition of birds this year, a 12-member team consisting of professionals and volunteers from the Czech Republic, Denmark, England, Ireland and Scotland conducted daily goose counts, documented the amount of fat storage in individuals, and resighted collared birds for the entire stop-over period (3 April to 6 May).

An average of 1,000 Greenland White-fronts were counted on fields at Hvanneyri; peak numbers occurred on 22 April, when nearly 2,000 birds were counted. In addition, the team generated over 900 resightings of collared birds; most were collared at Wexford, Ireland. A few resightings were of birds collared in the late 1990s, making them 12–15 years old. Two of the team members, Kerry Mackie (WWT) and Alyn Walsh (National Parks and Wildlife Service of Ireland), coordinated cannon-netting efforts, catching 66 new birds and two recaptures; this important injection of collared birds into the population will contribute to our studies and the estimates of long-term survival of individuals.

Preliminary results from this spring suggest that the geese arrived 10–14 days earlier than average, as conditions in Iceland were mild and snow had melted by mid-February. In fact, the first flocks arrived on 24 March, the earliest documented arrival date. Further, the geese were in exceptional condition from early April; abdominal profiles (which indicates fat storage) of



Greenland White-fronted Geese, including three colour marked individuals, at Hvanneyri, western Iceland in April 2012 (Alyn Walsh)

many individuals during early April were not dissimilar to those of birds departing for Greenland in past years.

We also observed many birds resting in fields throughout the day, perhaps due to their exceptional condition. Indeed, many birds were in departure condition from mid-April, although the mean departure date was only slightly earlier than in previous years. These results indicate the stop-over period in Iceland is increasing. Historically, White-fronts have stayed for about three weeks but this period has now lengthened to nearly six weeks. Although further research is needed at stop over areas, it seems likely that changes in climate have resulted in warmer conditions and thus increased foraging opportunities in Iceland, which the birds are exploiting.

The trip to Iceland completes the fieldwork for this season. I will return (as will the geese) to wintering sites in Ireland and Scotland this November, as I continue to follow the 20 tagged birds. Ideally, I'll use historical and tag data to better understand the Greenland White-fronted Goose population decline and provide management recommendations to return this important population to favourable conservation status.

**Mitch Weegman**

## The challenges encountered in organising Pink-footed and Greylag Goose counts: Fife and south-east Scotland

Whilst WWT is responsible for the overall coordination of the annual Icelandic-breeding Goose Census (IGC), the country is divided into various regions/areas for the purpose of data gathering and presentation. This enables trends in numbers and changes in distribution to be assessed both within and between winters.

In many regions, WWT relies upon the support of local coordinators to obtain coverage of sites, liaise with counters and ensure that coverage is as complete as possible. This helps to ensure that knowledge of local goose distribution and the use of particular roost sites is taken fully into account when organising and supporting the national counts. We have had the role of coordinating the national counts in Lothians and Borders for most years since 1981 (Peter Gordon undertook this task for a number of years during the 1990s and there was

no coordinator in the early 2000s), and in Fife since 1991. This has complemented our own long-running study of goose feeding and roosting distribution in these areas.

It is stating the obvious that the census is only as good as the coverage which is obtained, so a key role of a local organiser is to find counters and encourage them to count their site or sites for a number of years, even if few geese are recorded. There is no doubt that counting geese at a roost site is not to everyone's taste as weather conditions and poor light can test the resolve of the best of observers. However, counting can have its rewards not just with the potential spectacle of observing hundreds or thousands of geese using the roost but with the possibility of observing other roosting birds as well, such as Whooper Swan, Goosander and various gull species.

Over the years, a core of observers has been involved in both Fife and Lothians/Borders; many of these observers are very experienced and thus help to ensure a consistent approach to counting at the key sites. Hearty thanks are expressed to them all. However, new observers are also regularly required to ensure that all known and potential roost sites are checked and to act as stand-by for an observer who is unable to undertake a count. Anyone undertaking goose counts, especially new counters, therefore, should be aware of the following:

- **Timing of roost counts**

Unlike most other waterbirds, which are counted during the day for WeBS counts as they tend to be closely associated with a water body throughout the day, geese primarily use water bodies as a night time roosting site, often feeding many miles away from the roost during the day. Goose counts, therefore, need to be undertaken at dawn or dusk (Gilbert *et al.* 1998) and it is important that sufficient time is allowed for this, *i.e.* if undertaking a dawn count an observer should be present at least one hour before dawn to ensure that any early departure of birds is recorded, whilst at dusk an observer should remain until at least one hour after sunset after which time it will be too dark to count any arrivals. It is also important that observers undertake their counts as near as possible to the count dates (*i.e.* dusk on Saturday or dawn on Sunday) to avoid problems of geese moving between roost sites and thus being double-counted.

- **Early return of count data**

Once all of the national counts have been completed, observers should return the completed recording form to the local coordinator (or national organiser if there is no local coordinator) as soon as possible and ideally within six weeks of completion of the final count. Even if no geese were recorded it is important that the form is completed and returned – it is just as important to know where geese are not present as where they are.

- **Advising the organiser of inability to undertake a count**

Whilst unforeseen circumstances can arise, it is important that, wherever practical, if an observer is unable to undertake a count they advise the local coordinator so that a replacement counter can be found, or even if the counter can find a replacement.

- **Identification of new roost sites**

In theory, local coordination should make for better coverage. However, changes in how geese use an area can make it difficult for even local observers to have a full understanding of what geese are doing in their area. This especially applies to geese making use of new roosting sites, *e.g.* in Fife new water bodies created as a result of restoration from sand and gravel extraction have proved attractive to geese as resting areas during the day, with feeding in nearby fields, but their value as roosts is less well understood. More observers are required to ensure that these sites are brought into the local count network otherwise the assessment of the total population could be adversely affected. In addition, both new and established sites would benefit from counts additional to the nationally coordinated roost counts so that their value as roosts and trends in use throughout and between winters is identified; the value of some sites, or the pattern of change in use of a site,

may not be accurately assessed from national census counts alone (Brown & Brown 2008; Brown 2010).

- **The Greylag conundrum**

The national count of Iceland Greylag Geese has become complicated by the presence of an increasing population of re-established birds (British Greylag Geese) and the redistribution of the Iceland birds further north in Scotland (Hearn & Mitchell 2004). This is especially true in the Lothians where there has been a clear shift away from a wintering Icelandic population, varying between 1,500 to 3,000 birds in the 1980s, to one dominated by British Greylag Geese; by November 2010, all of the 525 birds counted were considered to be British birds, all at sites frequented by Greylag Geese in the summer. The timing of this change has not been fully established as the expansion of the local goose population was not immediately identified, but it was apparent that by the early 1990s, counts from the summer suggested that the Lothians population was probably in excess of 1,000 birds, some of which may move to other areas to moult and/or roost or use uncounted/unknown roost sites. The presence and movements of these British birds make it difficult to be certain of the accuracy of the Iceland Greylag Goose counts in winter unless an estimate of the number of summering Greylag Geese is made. Counts of such birds in August or September provide a good indication of the numbers present which can then be assessed against the total numbers of Greylag Geese counted on the national census dates. Observers are encouraged to count these British birds so that both their numbers and expansion can be properly documented and taken into account. This may mean counting sites not usually covered for the IGC. Information on breeding numbers are also of great value as these birds tend to have large broods, which helps to reinforce the growth of the population, and we have relatively poor knowledge of the breeding success of British Greylag Geese.

Counting geese can be exhilarating, satisfying, rewarding, demanding and frustrating as well as testing of both patience and commitment. All of these feelings can be encountered on any goose roost visit! The important point is that the data provided gives as full a picture as possible of Pink-footed and Greylag Goose population status. New counters are always welcome, so please get in touch if you would like to help.

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Allan W. Brown & Lyndesay M. Brown

## Mapping the distribution of feeding geese and swans

Assessing the abundance of geese and migratory swans in the UK has been undertaken by WWT since the 1950s. The numbers of some populations are assessed annually, whilst others once every five years. An organised and robust monitoring scheme has evolved over the years, which sees volunteer and professional observers counting at key roosts and, in some cases, feeding areas. In addition, regular, usually annual, assessments of breeding success are determined to measure the health of the populations.

Knowledge of the feeding distribution of these geese and swans, which almost exclusively exploit agricultural areas, is less complete however, as there has been only a few local studies specifically designed to assess this, and nothing at a national scale. This is therefore a key gap in our current knowledge of how geese and swans use the landscape, and this therefore makes it difficult to confidently identify the relative importance of specific areas. The need to do this is increasing as knowledge of the distribution of geese within the landscape is particularly important to conservation and statutory bodies, for example when the landscape is faced with multiple applications for industrial developments such as wind turbines. These data may also be useful for the identification of protected areas. Therefore, WWT and SNH have recently undertaken an exercise to collate existing feeding data for Pink-footed Goose *Anser brachyrhynchus* and Greylag Goose *Anser anser* in Scotland (Mitchell 2012).

The best information comes from detailed local studies that have taken place, such as work undertaken by Mike Bell and colleagues to map the feeding distribution of Pink-footed and Greylag Geese in Aberdeenshire and again later in Perth & Kinross. Ian Patterson and students at Aberdeen University mapped the location of feeding geese around the Loch of Strathbeg, and Derek Forshaw undertook a similar exercise in Lancashire in the early 1980s. Farmland surrounding Loch Leven, Perth & Kinross was checked four times each week during winter 1994/95 and a detailed picture of the location of individual feeding flocks was mapped. The geese were highly selective of certain fields. Of 1,492 fields checked, only 14% ever held Pink-footed Geese. Recently, Scottish Natural Heritage have commissioned similar feeding distribution studies around key roosts in the Lothians and Borders.

In addition to these structured studies, *ad hoc* data were obtained by examining the records of colour-marked individuals. In most cases, the observer made a note of the location, the flock size and the habitat the geese were feeding in. Furthermore, this information was also gleaned from records of flocks examined for breeding success assessments.

These data were recently collated to map the feeding locations of geese at a larger scale (e.g. Figure 4). Whilst the general feeding areas of geese flying from roosts are often known by goose counters and birdwatchers, occasionally areas are abandoned, or find favour, especially if there have been changes in the cropped habitat or the birds are adversely affected by disturbance.

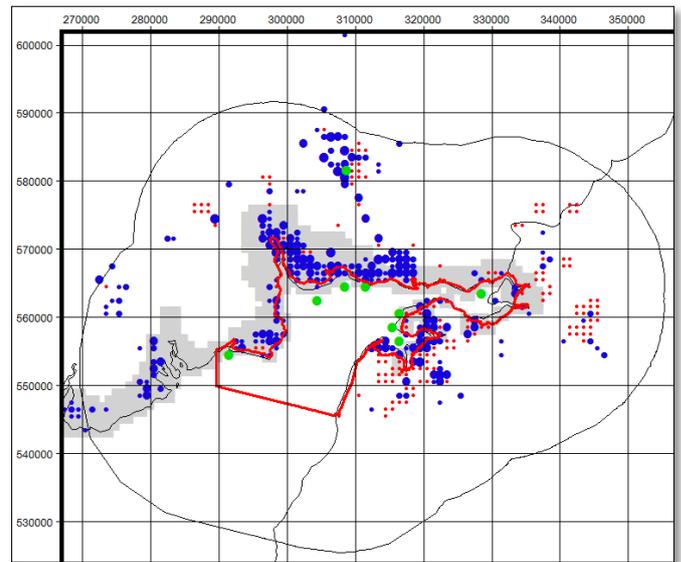


Figure 4. Feeding distribution of Pink-footed Geese in relation to the Upper Solway Flats and Marshes SPA shown with a red line drawn at 20 km from the centre of the Solway Firth roosts. Green dots represent approximate position of roosts. Proportional blue dots show the locations of feeding geese. Red dots are 1 km squares thought to hold feeding geese but where no positive records exist and grey squares show areas where standardised surveys have been carried out.

Data were initially gathered for Pink-footed and Greylag Geese from Scotland, although the intention is to map the feeding areas for a range of geese and swans using cropped land throughout the UK. In total, just over 34,500 Pink-footed Goose and 13,500 Greylag Goose records were collated and mapped. The location data were a mixture of records from standardised surveys, where the presence and absence of feeding flocks in a particular area was known, and non-standardised records, where an observer happened to see a flock of geese. At the most basic level, mapping records of where geese have been seen has its value and this formed the basis of the project.

Analysing such *ad hoc* data is fraught with difficulties, largely because of the lack of nil records (even the most enthusiastic of goose counters do not enjoy recording empty fields!) Another problem is that unless a marked goose, or an unusual species, is found amongst a feeding flock, birdwatchers have, until now, had little reason to log the presence of a feeding flock. Advances have been made in recording the locations of birds, notably through the online recording system *BirdTrack*, a joint venture by the British Trust for Ornithology, the Royal Society for the Protection of Birds, Birdwatch Ireland, the Welsh Ornithological Society and the Scottish Ornithologists Club.

WWT is keen to see more recording of feeding geese and swans in the landscape for the important reasons identified above. Flocks of geese and swans are always worth checking for unusual species, undertaking age counts or colour-marked individuals, but even if the only information gained from such an observation is the date, location, species and number, this is well worth recording and so we encourage you to record and

# Articles

submit such information, including historical data from notebooks if you have it. The easiest way to submit such records is via *BirdTrack*; once you have registered, adding records is straightforward, however one important feature to remember is that feeding flocks need to be logged as birds being on the ground (rather than flying over a location). Alternatively, you can send information direct to WWT.

Our understanding of the location of feeding geese and swans in relation to Special Protection Areas, to changes in agriculture and to changes in the distribution of geese within the UK will

## Further efforts in Bean Goose ringing in Fennoscandia

Until a few years ago, the general opinion was that all Bean Geese breeding in Fennoscandia were Taiga Bean Geese *Anser fabalis fabalis*, while Tundra Bean Geese *Anser fabalis rossicus* were thought to be uncommon passage migrants. The discovery of breeding Tundra Bean Geese in Finnmark, northern Norway, and the regular occurrence of large *rossicus* flocks during migration and in winter in Sweden, Denmark and Finland has already changed that opinion. However, the picture now seems to be even more complex, as it seems each of these subspecies is not simply one uniform group with common migratory behaviour. There is growing evidence for the existence of different subpopulations with different migration patterns within each of these subspecies.

To learn more about the migration system of these subgroups, neckband marking of Bean Geese has intensified since 2005. During spring migration, *fabalis* and *rossicus* birds have been marked at coastal staging sites in northern Sweden (Umeå and Luleå), and a few *rossicus* birds also at Porsangensfjord in Finnmark. Further, more than 70 birds were caught at a Tundra Bean Goose moulting site on Varanger peninsula, Norway, in summer 2010. In Finland, the long-term marking programme of breeding Taiga Bean Goose in Oulu region and Lapland has also continued and intensified during the most recent years.

Currently, three working groups (a Swedish-German, a Norwegian and a Finnish group) deal with Bean Goose marking in Fennoscandia, and all these groups are now working closely together. In 2012, they made a joint effort during the spring migration period near Umeå, northern Sweden, (when six *rossicus* and two *fabalis* birds were caught), a moult catch in southern Lapland, Sweden, in mid-July (37 *fabalis*), catches of breeding birds in Oulu region of Finland (six *fabalis*), and another moult catch on Varanger peninsula in late July (39 *rossicus*, one *fabalis*). Swedish birds are marked with blue neckbands (3 letters; white inscription), Finnish birds with red neckbands (letter + 1 number; white inscription) and Norwegian birds with yellow neckbands (letter + 2 numbers; black inscription). In addition, 45 birds were fitted with light-loggers/geolocators (five in Sweden, 40 in Norway) and five birds with satellite transmitters (two in Finland, three in Norway).

be enhanced if pooled information on the distribution of birds in the landscape is recorded. Thank you in advance for any information you are able to provide.

## Reference

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Carl Mitchell



Taiga Bean Geese (c/o Thomas Heinicke)

Of particular interest is the marking of moulting Taiga Bean Geese at two different sites in southern Lapland, Sweden, (when 600–700 birds were present in late July 2012). These sites are the only known moulting sites of non-breeders in Fennoscandia, while non-breeders in NE Sweden and in Finland normally undertake moult migrations towards Novaya Zemlya in Russia. More interestingly, the catches repeat one undertaken 25 years ago, when 36 *fabalis* were caught, most of which wintered in NW Jylland, Denmark, and Norfolk, UK.

We therefore expect that some of the neckbanded birds may winter in the UK, and thus, we would like to ask you and other UK birdwatchers to look for 'our' birds. All neckbands can be read from fairly large distances using a telescope. Preferably, observations of neckbanded birds should be reported via the website [www.geese.org](http://www.geese.org), but direct reports are also welcome (please contact Thomas Heinicke or Adjan de Jong; see page 28 for contact details). We are not only interested in the neckband readings, but also in additional information like flock size, feeding habitat and social status (paired/unpaired, number of young, etc.).

Many thanks in advance for each sighting!

Thomas Heinicke & Adjan de Jong

## Indicia: Online reporting of your observations

WWT are developing an online data entry and reporting system to allow observers to supply their colour-mark, age assessments and count records, and receive feedback, view summary data and use other features. Over the past few months, volunteers, staff and contractors have been designing, building and testing the system. The first phase of this project will provide a system for submitting records of colour-marked birds for WWT projects (starting with Whooper and Bewick's Swans). Forms for count and age assessments will be completed in the next stage.

The online recording system is based on *Indicia*, an open source biological recording system. This means WWT will benefit from collaborative developments and improvements of the system by industry experts at no additional cost and it also means that the database modules that WWT develops (such as the module for colour-marked individuals) will be available for others to use. Within the UK, *Indicia* is the system of choice for the Centre for Ecology and Hydrology, Open Air Laboratory (OPAL) and the National Biodiversity Network. We've been delighted to be able to support the development of the *Indicia* system through the work we are doing. Some examples of *Indicia* sites can be found at [code.google.com/p/indicia/wiki/IndiciaSites](http://code.google.com/p/indicia/wiki/IndiciaSites). This means that WWT's online database will be separate to the Goose Specialist Group's online recording system for colour-ringed geese ([www.geese.org](http://www.geese.org)), although WWT intend to continue to share data and ensure these systems work well together.

### Colour-marked birds

Once logged in, observers will be able to provide the date, location and details of the colour-marked birds that were observed, plus any further comments (e.g. Figure 5). Once data have been entered, observers will then be able to view the birds' life history in tabulated and mapped formats. Observers will also be able to return to this at any point in the future to see additional sightings that have been reported since theirs. This is a significant improvement on the level of feedback provided

previously since observers only received a one-off life history report at the time when they sent their observations. The online database is primarily a spatial (map-based) one. This means that observers can find locations easily, in case a grid reference or coordinates were not taken at the time of the observation (e.g. Figure 6). In addition, observers can see whether birds have been recorded nearby, without having to be familiar with site names, codes or coordinates.

Observers who can't or don't wish to use the online system can continue to supply records to WWT by email, telephone or spreadsheet in the normal way (see page 3). WWT will continue to provide feedback manually for those observers not using *Indicia*. However, WWT would recommend you have a good look at the new system once it is available, since in future this will be the preferred way for supplying records.

### Future developments

A lot has been achieved, but there's still a long way to go. Once the three main types of online recording have been launched, improvements based on any suggestions and comments that users make can be made. A bulk data upload option will be developed, so if you're a Local Organiser or a contributor of large numbers of records you'll be able to upload your spreadsheet directly.

As phases of this project are completed and data entry becomes possible we will notify the network by email and via the Species Monitoring Unit web pages ([monitoring.wwt.org.uk](http://monitoring.wwt.org.uk)). We hope to have the colour-marked swan dataset online in the next few months, and a module for the IGC counts completed during the winter. If you have any queries or would like further information, please contact us on [monitoring@wwt.org.uk](mailto:monitoring@wwt.org.uk) or telephone Steve Roe or Kane Brides (contact details on page 28). We'll keep you informed as things develop and hope you find this a considerable enhancement to your goose and swan recording.

Steve Roe

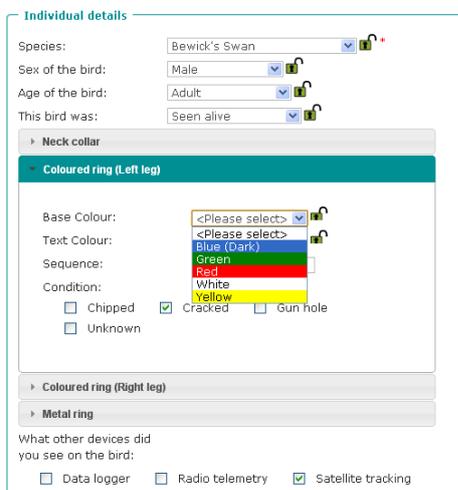


Figure 5. Entering sightings using the ring colour selector.

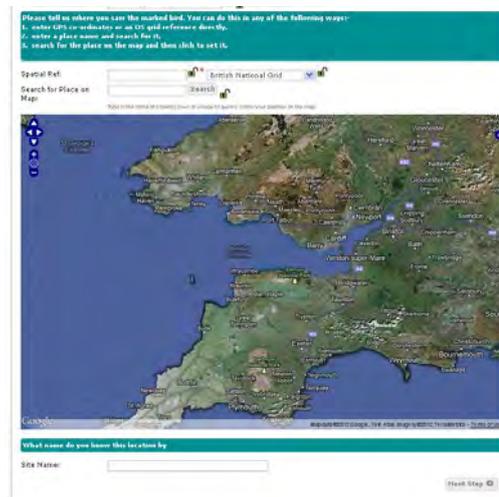


Figure 6. Observers can search for a location using a map.

# Counter profile

## Frank Mawby: Goose count coordinator for the Solway Firth



### Which area do you count and how long have you been counting

I became warden of the Ribble Marshes National Nature Reserve (NNR) in 1980 shortly after its acquisition by the then Nature Conservancy Council (NCC) (now Natural England) to save Banks Marsh from developers who had plans to embank and convert it to farmland. It was not long before I was co-opted onto Derek Forshaw's grey goose count team. I had to quickly get to grips with the art of estimating geese leaving the roost in the half-light of dawn, often flying in two or three different directions, some at considerable distances. Even after all these years, I reckon I can be 20% low on first glance.

My 'affair' with Pink-footed Geese was already established after a spell with the British Trust for Conservation Volunteers in central Scotland and the enthusiasm of Bernard Barker, who instigated conservation measures on the Eden Estuary in Fife. My very first encounter was hearing Pinkfeet flying over Doune one September evening under starlight. I was hooked.

I moved to the Solway in 1986 to become warden of the South Solway NNRS. The Estuary was not one of those Reserves but I was unable to resist the urge to get to know more about how the geese used the area. By February that year I soon discovered that here was an area of some considerable importance and the incoming geese were actually the same ones I had been watching on the Ribble. I also discovered to my amazement that the Solway Firth was not counted, although counts were taken by NCC and WWT at Caerlaverock. At this time very few birders came to the English side of the Solway. The Solway Firth was too important not to know; eventually there would be developments that would have an impact on the geese. That it should turn out to be wind turbines was a bit unexpected but the idea of a barrage was always a possibility.

I discussed the situation with Paul Shimmings at WWT and Wally Wright at Caerlaverock NNR and through them made contact with the Solway Wildfowling Association. We met and gained enough information and counters to begin counts in the autumn of 1987. Pink-footed Geese do not come to the Solway in significant numbers until January, therefore to cover the IGC and the main goose period on the Solway we agreed to count between October and April to get a full picture of roosts and feeding patterns. We agreed that the counts should be

undertaken at dawn during a dark phase of the moon and on neap tides, which usually ensures that the majority of the geese were roosting on the estuary.

### Describe the roost and counting conditions.

The Solway Firth is a complex estuary, at its head the Rivers Esk and Eden flow in round Rockcliffe Marsh with Burgh Marsh to the south of the Eden. Both rivers have very large catchments. Half way along the River Annan comes in from the north. The Lochar Water then creates its own little bay to the east of Caerlaverock Merse and helps to form Priestside Bank, a key roost. Further east the River Nith forms its own sub-estuary and creates Blackshaw Bank, the other big roost area and the associated merses Caerlaverock and Kirkconnell. On the English side, the Rivers Waver and Wampool flow into Moricambe Bay and help to create Newton, Border, Calvo and Skinburness Marshes. The Solway flows out into the Irish Sea past Grune Point and Southernness Point, although on the Scottish side Mersehead is still within the ambit of the Solway tides. As with most estuaries on the west coast of the UK, the Solway has a large tidal range. The Solway is a dynamic estuary in constant flux as the channels change course from tide to tide, although the shingle banks do seem to resist the tides and remain relatively constant. Cardunock Flats is another regular roost and the large expanse of accreting silt off Rockcliffe is the other main roost.

The estuary was the main roost until about 2005. In 2002, English Nature acquired the peat cutting area and we commenced peat bog rehabilitation work. As Site Manager of the Solway Mosses NNR, I was responsible for creating a significant area of open water on Wedholme Flow. The Pinkfeet quickly realised this was a very safe roost and several thousand now prefer this site to the estuary. Counts are also affected by large areas of floodwater or very windy conditions, which can keep the Pinkfeet inland either on floods or on the Esk at Longtown or the inland lochs on the Scottish side.

The wildfowling knowledge helped to determine the main flight lines. The difficult bit was deciding where to count from and finding enough counters to cover the main flight lines. I have always struggled with this, but over the years we have learnt when and where we need counters to cover the key flight lines albeit that some counters are scanning very large areas and three or four flight lines. In 2007, after 20 years of counts and increasingly unable to find enough counters I reluctantly gave up the January to April counts to concentrate on the IGC dates. It is a pity really given the number of wind turbine developments and regular proposals for a tidal generator barrage. However, I do try to monitor the Pinkfeet at peak times in February and March and the many birders now watching the Solway also enhance the counts. The Wetland Bird Survey (WeBS) counts also help but rarely if ever find anywhere near the total numbers using the area during peak months. I published a summary of our observations in 2009.

### Have there been any particular changes in recent years?

There have been some interesting changes over the years and whilst the period October to December still holds

comparatively low numbers, since 2001 we have seen an increase in the numbers staying on the Solway. In the 1990s, 3,000 Pinkfeet was a good count and most would be on the Scottish side. In the late 2000s, we are now finding between 5,000 and 7,000 with many on the English side. I think the main reason is a change in farming since the Foot and Mouth Disease episode in 2001 and a general increase in animal food costs. Farmers are growing spring corn as an alternative to grass silage and this has provided more autumn stubbles. Farmers take a chance with corn that the weather will prevent it all being harvested as happened this autumn and in 2009. The geese love these un-harvested crops. Occasionally snow cover in Scotland will drive them down to the Solway, where snow rarely lies for long. A remarkable 49,942 Pink-footed Geese were counted in early December 2010 as birds escaped the frozen waterbodies and extensive snow cover further north.

Looking back through the counts I see that we would always expect the main arrivals from the Ribble and North Norfolk in late January but in recent years it seems to be a couple of weeks later and into February before they arrive. The Solway will attract 15,000 to 20,000 Pinkfeet through February and March into early April with small numbers lingering into mid May. The main feeding areas are widespread and they can be very hard to find in the gently undulating countryside on both sides of the Estuary until they begin to feed on the marshes and meres and the agricultural fields nearby. The Pinkfeet seem fully aware that inland shooting ends on 31 January and wildfowling on 20 February and it is not until the end of February that they fully exploit the marsh grass.

The Barnacle Goose flock has increased since the late 1990s. Over 5,000 birds regularly feed on and around the Moricambe Bay marshes and another large flock has for many years fed on Rockcliffe Marsh.

Since 2001 there has been a significant decline in cattle numbers grazing the marshes in summer but (at least to my eyes) an increase in sheep numbers grazing in winter on some of the marshes. These sheep are mostly hill sheep being 'out-wintered'. Unfortunately the sheep do not remove the rough areas of Red Fescue grass that has developed as cattle do. The result is the sheep eat the 'Salt Marsh' grass before the geese get to it. Goose grazing schemes were introduced on the Scottish side some years ago to reward farmers for providing goose grazing fields. In 2008, this was introduced on the English side under the Higher Level Stewardship Scheme.

Do wind turbines have a significant impact on Pink-footed Geese? I am not sure having seen over the last eight years what little impact the six turbines on or near Watchtree Nature Reserve have on birds in general. Pinkfeet are very adaptable birds but they are very flighty and as we know when they take off en-masse in a panic they go every which way. I am of the view that a single turbine in the wrong place will inhibit them. The cumulative effect of several may put them off 'traditional' sites. Their habit of feeding and flying at night or in low light may also make them vulnerable. I would caution also that a single bird colliding with a turbine would do a lot of damage to the turbine. I only hope that an effort is being made to research what impact a turbine has on the geese. Turbines are a worry

but not as much as a Solway tidal barrage of any description, which I feel could have a significant impact on the geese.

On the plus side, the Solway marshes continue to accrete at a remarkable rate, especially Rockcliffe, which to my eyes seems to have almost doubled the green area over the last few years. The problem with this increase in marsh is getting enough livestock to graze at the right time of the year.

The season 2011/12 was probably the most remarkable in terms of species. The Solway flock is usually about 99% Pinkfeet with a few White-fronted Geese, the occasional Snow Goose and Bean Goose, but in autumn 2011 large numbers of European White-fronted Geese and Bean Geese were found amongst them. One morning on Wedholme Flow I counted 52 Bean Geese and at least 140 European White-fronted Geese but other birders had higher counts.

The English side of the Solway was rarely visited by birders in the late 1980s but this changed when the RSPB purchased North Plain Farm and Campfield Marsh and English Nature began to make NNRs more accessible. The Solway is now as well watched as other estuaries. My only complaint is that few bird watchers are willing to help with counting.

#### **Favourite moments since starting goose counting**

Many, but few can surpass the morning I realised that Banks Marsh was full of geese. I belly crawled to the top of the sea wall carefully lifted my head over the bank to see the whole 2,000 acres of marsh covered with thousands of geese, well in excess of 10,000 birds, from the foot of the bank to the *Spartina*. More recently, in late February 2011, standing on Border Marsh and having a morning flight of over 15,000 Pinkfeet and Barnacle Geese coming over me in a steady stream for nearly half an hour. Or maybe the moment I was hooked that evening in 1973 at Doune near Stirling, when Rowley, the chap I was with, excitedly leapt up and down as he heard the first Pinks of the season passing overhead under a starlit sky.

#### **What do you most enjoy, or what motivates you most about goose counting?**

The motivation was and remains the desire to contribute to the conservation of these birds. A set count date also ensures that at least once a month I get out and enjoy the sights and sounds of the estuary between dawn and sunset, geese or no geese.

#### **How would you improve the Goose and Swan Monitoring Programme?**

The Solway should be counted from October to April but getting the counters is the challenge. Maybe we need to get into schools and motivate one or two youngsters. Perhaps an educational video for schools might be an idea? Or persuade *Countryfile* or *Autumn Watch* to come out on a count? Monitor the key birding web-sites and make sure the goose and swan count message gets out. Otherwise, I think the overall count methods work well and only some modern technology could make it better such as replacing a human with a robotic scanning camera that can count, or satellite scanning to pick up roosts, flight lines, feeding areas and day and night time movements. Does away with us counters though, but we are a bit eccentric and there seems to be fewer of us!

# Progress reports

## Breeding success of Bewick's Swans wintering in Britain and Ireland in 2011/12

Bewick's Swan age counts were conducted at three major wintering sites for the species in Britain during winter 2011/12, namely WWT Slimbridge (Southwest England), WWT Martin Mere/Ribble Estuary (Northwest England) and the Ouse Washes/Nene Washes (East Central England). A small number of swans were also aged at two sites in Northern Ireland and the Republic of Ireland. Data from all sites, with the exception of WWT Slimbridge, were collected in January 2012 because early arrivals (*i.e.* those present in October and November) tend to be non/failed breeders (Rees *et al.* 1997), whereas age assessments made in January can be taken as being more representative of the population as a whole. Age counts at Slimbridge, where individual swans wintering at the site are identified daily by their natural bill markings, are for all swans recorded there during the winter season (October to March). With the exception of WWT Slimbridge, the percentage of young and mean brood size was derived from age counts conducted within a five-day window (between 13–17 January), in an effort to avoid any bias that would arise from repeated observations of the same families at certain sites. Regional variation in the percentage of young was also assessed in order to determine any differences in the geographical distribution of family parties.

A total of 2,805 Bewick's Swans was aged and brood sizes were recorded for 175 families (Table 1). The low sample sizes for brood counts at WWT Martin Mere/Ribble Estuary and in Ireland reflected the low number of Bewick's Swans wintering in these areas. Overall, Bewick's Swan flocks contained 11.9% cygnets and the mean brood size of pairs with young was 1.9 cygnets (Table 1).

The mean percentage of young in flocks at WWT Martin Mere/Ribble Estuary, the Ouse Washes and WWT Slimbridge, where data are collected annually, was 11.5% ( $n = 2,785$ ), slightly higher than the previous ten-year mean for these sites (2001/02–2010/11; 10.3%). The mean brood size for these sites was 1.8 (149 broods) cygnets, slightly lower than the previous ten-year mean (2001/02–2010/11; 1.9 cygnets).

There was variation in the proportion of cygnets recorded across Britain and Ireland with the percentage of young ranging from 6.3% in the Republic of Ireland to 16.9% at WWT Slimbridge (Figure 7). Variation between Ouse Washes/Nene

Washes and WWT Slimbridge was statistically significant ( $X^2_1 = 7.5$ ,  $P < 0.01$ ). Sample sizes were not large enough to test statistically for variation between the other regions. The proportion of young recorded at WWT Martin Mere/Ribble Estuary and in Northern Ireland could not be assessed accurately in 2011/12 as very few birds were recorded there. Likewise, regional variation in brood sizes could not be assessed in these areas and in the Republic of Ireland because of the small number of broods recorded.

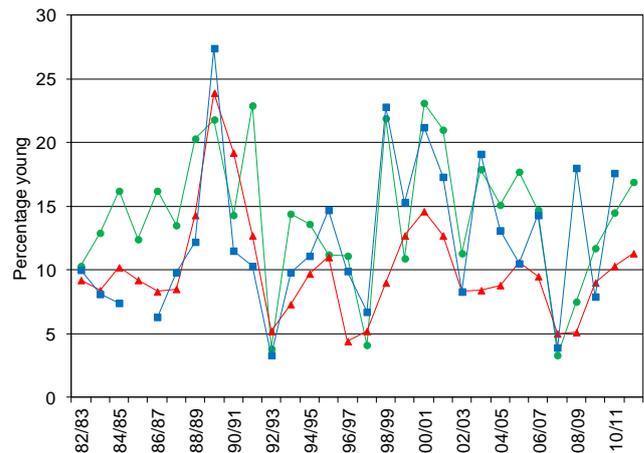


Figure 7. The mean percentage of Bewick's Swan cygnets recorded at WWT Slimbridge (green circles), the Ouse Washes (red triangles) and WWT Martin Mere/Ribble Estuary (blue squares); 1983/84–2011/12. Data for WWT Martin Mere/Ribble Estuary for 2011/12 are omitted because the sample size was very small.

There was regional variation in the distribution of Bewick's Swan families recorded in different parts of England, with a higher proportion of young found in Southwest England than in East Central England. This may reflect the tendency for smaller flocks, such as those recorded in the Southwest, to include a higher proportion of families than the larger flocks, whereas the latter may include a higher proportion of non-breeding (or failed breeding) birds (Rees *et al.* 1997).

Table 1. The proportion of young and mean brood size for Bewick's Swans at sites in Britain and Ireland during winter 2011/12.

| Region                         | Total aged (no. of young) | % young      | No. of broods (no. of young) | Mean brood size |
|--------------------------------|---------------------------|--------------|------------------------------|-----------------|
| WWT Martin Mere/Ribble Estuary | 7 [3]                     | Limited data | 1 [3]                        | Limited Data    |
| Ouse Washes/Nene Washes        | 2,494 [283]               | 11.3         | 154 [278]                    | 1.8             |
| WWT Slimbridge                 | 284 [48]                  | 16.9         | 19 [48]                      | 2.5             |
| Northern Ireland               | 4 [0]                     | Limited data | 0 [0]                        | Limited data    |
| Republic of Ireland            | 16 [1]                    | 6.3          | 1 [1]                        | Limited data    |
| Overall                        | 2,805 [335]               | 11.9         | 175 [330]                    | 1.9             |

These data indicate that Bewick's Swan breeding success was again relatively poor in 2011. Although annual breeding success has improved since the exceptionally poor breeding season in 2007 (4.7%), the percentage of young in British wintering flocks remains at less than 15%. A coordinated age count of 7,632 birds wintering at sites in Britain, the Netherlands, Poland, Denmark, Germany and Belgium between 3 and 5 December 2011 found 9.6% young overall, thus confirming that 2011 was a poor breeding year for the Northwest European population of Bewick's Swan (J. Beekman & W. Tijsen, *pers comm.* 2011).

Special thanks to C. Liggett for information from the Ribble Estuary, W. Tijsen and J. Beekman for reports from the Netherlands, WWT staff and volunteers at Welney, Martin Mere and Slimbridge and G. McElwaine, P. Watson, A. Walsh, G. Henderson and J. Small for counts made in Ireland.

### Reference

Rees, EC, JS Kirby & A Gilburn. 1997. Site selection by swans wintering in Britain; the importance of habitat and geographic location. *Ibis* 139: 337-352.

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## Breeding success of Iceland Whooper Swans wintering in Britain and Ireland in 2011/12

Whooper Swan age counts were conducted in six regions across Britain and Ireland during the 2011/12 winter. For East Central England (WWT Welney/Ouse Washes/Nene Washes) and Northwest England (WWT Martin Mere/Ribble Estuary), the percentage of young and mean brood size were derived from age counts conducted on two days (16 and 17 January 2012), to avoid biasing age assessments for the population through the inclusion of repeat observations of swans (likely the same individuals) at a particular site. In Southwest Scotland (WWT Caerlaverock), breeding success was determined from data collected on 20 December 2011, whilst counts were conducted between 13–18 January in North and Central Scotland, between 8–16 January in Northern Ireland and between 8–21 January in the Republic of Ireland. Regional variation was also assessed in order to determine the differences in the geographical distribution of family parties.

A total of 14,435 Whooper Swans was aged: 7,370 birds in England, 761 in Scotland, 2,818 in Northern Ireland and 3,486 in the Republic of Ireland. Overall, Whooper Swan flocks contained 12.5% young and the mean brood size for pairs with young was 2.0 cygnets (Table 2).

The mean percentage of young in flocks at WWT Martin Mere/Ribble Estuary, WWT Welney/Ouse Washes and WWT Caerlaverock, where data are collected annually, was 10.6% (n = 7,105), below the previous ten-year mean (2001/02–2010/11; 14.9%). The mean brood size for these three areas was 1.9 cygnets per family, also below the previous ten-year mean (2001/02–2010/11; 2.4).

There was evidence of variation in the distribution of families between regions ( $X^2_5 = 93.2$ ,  $P < 0.001$ ). The highest breeding success was found amongst birds in North and Central Scotland (17.8%) and Southwest Scotland (16.7%), with the lowest recorded in East Central England (9.5%, Figure 8). Regional variation in brood size was also evident, ranging from 1.9 cygnets per family in Northwest and East Central England to 3.1 cygnets per family in Southwest Scotland.

Poor breeding success in summer 2011 was most probably influenced by cold conditions encountered across Iceland in June when the mean temperature in the north of the country (6.7°C) was several degrees lower than the five-year average (10.3°C), and heavy snow affected many areas (Icelandic Meteorological Office).

Table 2. The proportion of young and mean brood size of Whooper Swan flocks during winter 2011/12.

| Region                     | Total aged<br>(no. of young) | % young | No. of broods<br>(no. of young) | Mean brood size |
|----------------------------|------------------------------|---------|---------------------------------|-----------------|
| Northwest England          | 1,307 (179)                  | 13.7    | 94 (179)                        | 1.9             |
| East Central England*      | 6,063 (575)                  | 9.5     | 267 (497)                       | 1.9             |
| Southwest Scotland*        | 480 (80)                     | 16.7    | 13 (40)                         | 3.1             |
| North and Central Scotland | 281 (50)                     | 17.8    | 19 (50)                         | 2.6             |
| Northern Ireland           | 2,818 (386)                  | 13.7    | 186 (386)                       | 2.1             |
| Republic of Ireland        | 3,486 (528)                  | 15.1    | 249 (528)                       | 2.1             |
| Total                      | 14,435 (1,798)               | 12.5    | 828 (1,680)                     | 2.0             |

\*Brood sizes were not recorded for all flocks aged. The total number of cygnets used for the % young and the mean brood size estimates therefore differ for the regions indicated.

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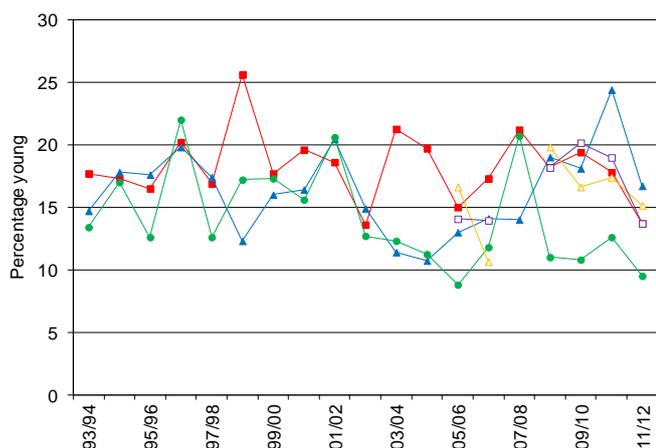


Figure 8. The mean percentage of Whooper Swan cygnets recorded in East Central England (green circles), Southwest Scotland (blue triangles), Northwest England (red squares), Northern Ireland (open orange triangles) and the Republic of Ireland (open purple squares) in winters 1993/94 –2011/12.

The regional variation in the distribution of families may reflect a general preference for Whooper Swan families to select wintering sites closest to their Icelandic breeding grounds (Rees *et al.* 1997), in that the proportion of young was lower in flocks further south within Britain, although this was not the case in Ireland. Studies have also shown that Whooper Swans ringed in the Suður and Norður-Þingeyjarsýsla regions of northern Iceland are more likely to winter in England, that those ringed in the eastern region of Norður-Múlasýsla are more likely to winter in Scotland and that birds ringed further west in Skagafjörður, are more likely to spend their winter in Ireland (Newth *et al.* 2007; McElwaine *et al.* 1995; Gardarsson, 1991). Regional variation in the prevalence of families in winter may therefore also be linked to environmental conditions in specific regions of Iceland during spring and summer.

Research has also shown that smaller flocks comprise higher proportions of young than do larger flocks (Rees *et al.* 1997) which may partly explain the higher percentage of young recorded in North and Central Scotland (where the average flock size was 94) compared to that recorded in East Central England (122 birds). Reasons for the regional variation in mean brood size have yet to be determined, but may be due to the larger more dominant family groups (Black & Rees 1984) displacing pairs with fewer young and non/failed breeders from areas closer to the breeding range.

## The Icelandic-breeding Goose Census 2011

The 52nd consecutive census of Greenland/Iceland Pink-footed Geese and Iceland Greylag Geese took place during autumn and early winter 2011, with an additional spring census in late February 2012. Count data were also received from Southwest Norway, Ireland and Iceland, the latter based on a combination of aerial survey, ground counts and information from hunters. Weather conditions were generally considered favourable during the counts with very few sites reporting underestimated counts.

The highest counts of both populations were in November 2011 and these figures were adjusted to account for major sites

Special thanks to: C. Liggett for information from the Ribble Estuary, WWT and RSPB staff and volunteers at Caerlaverock (L. Griffin, R. Hesketh and M. Youdale), Welney (S. Wiltshire, L. Marshall, P. Harrington, M. Burdekin, S. Kershaw, C. Kitchin and J. Taylor) and Martin Mere (Tom Clare and Chris Tomlinson); to H. Schobben and W. Tijsen for counts from EC England ; to the Irish Whooper Swan Study Group and NIEA in Ireland (M. Bell, C. Burns, S. Burns, D. Cotton, G. Daly, J. Devlin, J. Dunleavy, I. Enlander, M. Enright, J. Gibson, R. Glynn, G. Henderson, N. McCullough, G. McElwaine, B. McPolin, G. Murphy, T. Murray, D. Nixon, M. Quinn, G. Robinson, G. Scott, J. Small, D. Suddaby, B. Sutton, A. Walsh, P. Watson and J. Wilson); and the following individuals in Scotland; V. Anderson, P. Hollinrake, E. Rawlings and T. Simon.

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that were not counted and for the number of British Greylag Geese counted prior to this census. This resulted in population estimates of 246,725 Pink-footed Geese and 119,915 Iceland Greylag Geese (Figure 9). Compared to population estimates in 2010, the 2011 figures represent a decrease of 17.2% in the Pink-footed Goose population and an increase of 8.1% in the Greylag Goose population.

The breeding success of Pink-footed Geese was much lower than the mean for the previous decade at 8.5% young (mean percent young 2001–2010: 19.4%) (Figure 10) and the mean brood size of successful pairs was 1.77 goslings, which was also

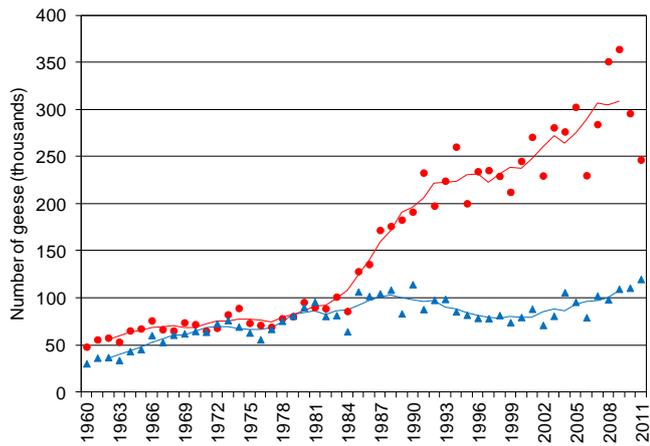


Figure 9. Population estimates for Pink-footed Goose (red circles) and Iceland Greylag Goose (blue triangles), 1960–2011. The five year running means (e.g. mean for 2009 is from population estimates for 2007–2011) are shown as lines.

lower than the mean recorded during the preceding ten years (2.14). The breeding success of Iceland Greylag Geese was slightly lower than the mean for the previous decade with flocks containing 19.6% young (mean percent young 2001–2010: 21.9%), and the mean brood size of 1.92 goslings per successful pair was lower than that of the most recent ten year mean (2.45), although the 2011/12 estimate was based on a small sample size.

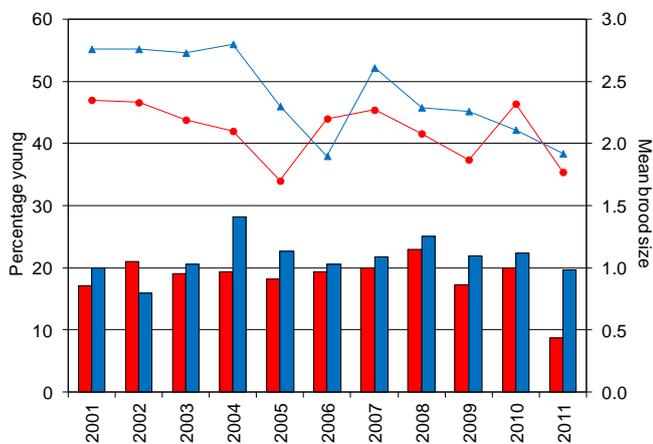


Figure 10. The percentage young (columns: red = Pink-footed Goose, blue = Iceland Greylag Goose) and mean brood size (line: red circles = Pink-footed Goose, blue triangles = Iceland Greylag Goose) of Icelandic breeding geese in Britain 2001–2011.

The last weeks of September brought exceptionally warm conditions to northern Britain and associated southerly winds. This no doubt affected the timing of the autumn migration and the October 2011 census weekend proved to be too early for mass arrivals. An estimated 20,000 Pink-footed Geese remained in Iceland in early October and, given that most of the geese remain in the remote interior, this figure must be treated as an underestimate. There is little evidence of an underestimate in Britain, since the major roosts were all covered, yet the population figure was 17.2% lower than in 2010, and a third lower than the 2009 population estimate. There has never before been a two year decline of such a magnitude.

Breeding success of Pink-footed Geese in summer 2011 was low compared to the long term average and the lowest since 1977. Seemingly snow and cold temperatures in May and early June affected breeding conditions in both the remote interior and lowlands of Iceland (see Whooper Swan account on page 15). The Greylag Geese nesting in Iceland appeared to have escaped the effects of the cold weather, perhaps because they started nesting earlier in milder conditions. Both winters 2009/10 and 2010/11 saw periods of harsh weather with prolonged snow cover and freezing temperatures over much of the UK. Over winter mortality of Pink-footed Geese may have increased during the prolonged periods of severe weather, although there were no reports of mass deaths. However, it is possible that a combination of higher than normal over winter mortality in the previous two years and a particularly poor breeding season in 2011, contributed to a decline in the population of up to one third. Unfortunately, bag statistics are not yet available from Iceland for 2011 to see if the later autumn migration in 2011 exposed more Pink-footed Geese to hunting mortality there. However, given the circumstances explained above, it might be prudent, for now, to consider the 2011 population figure as an underestimate. Nevertheless, it seems likely that a decrease in numbers has occurred since 2009/10.

The November 2011 count of Iceland Greylag Geese was thought to be reasonably comprehensive with sites being covered throughout most of the winter range. Coverage in Ireland was not complete (compared with an extensive survey carried out there in autumn 2007) and it is possible that the number of geese in Ireland, particularly Northern Ireland, is greater than reported here.

The departure of Greylag Geese from Iceland in autumn 2011 was unusually staggered. Relatively mild conditions persisted in Iceland into early December and c. 10,000 were still present at the time of that months count. The increase of c. 7,000 birds between the December and February counts on Orkney suggest that the majority of the geese still in Iceland in December headed straight to Orkney in mid-December. In addition to the unusually mild weather, the amount of barley grown in Iceland, especially in the southern lowlands where the majority of Greylag Geese are encountered in autumn, has increased in recent years. Despite the majority of the population now predominantly eating grass in winter on Orkney, spilled grain is highly nutritious to geese and the combination of a palatable food source and milder autumn weather conditions in Iceland has led to a delay in the autumn migration for many thousands of Greylag Geese. This is in contrast to the migration of Pink-footed Geese, outlined above, which, in some years, has begun earlier in the autumn.

The November count of geese in Iceland was based on a dedicated aerial survey, backed up by counts made by hunters and ornithologists. Excellent coverage was achieved and the count of over 44,000 birds was considered to be accurate. Annual bag statistics are not yet available from Iceland for 2011 to reveal if the relatively high level of shooting experienced there in recent years continues. Breeding success in the Iceland Greylag Goose population appeared to be average in 2011 (19.6%), although the figure was based on a small sample size, and in marked contrast to the productivity in Pink-footed

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Geese. Greylag Geese breed earlier in the year and in lowland areas of Iceland. It would appear that many breeding Greylag Geese managed to hatch and rear young ahead of cold weather in May and June that apparently adversely affected the breeding opportunities of the Pink-footed Geese.

The increase in numbers counted on Orkney appears to have levelled, with a peak count of 77,513 Greylag Geese counted in late February 2012. There is a need for a comprehensive assessment of the number of summering birds on Orkney and it is hoped that this will have been undertaken in summer 2012. For now an estimate of *c.* 10,000 birds, based on a summer survey in 2008, continues to be used as a correction factor, but this is now considered an underestimate of the true number of British Greylag Geese there. In Shetland, post breeding and winter surveys of Greylag Geese in 2010 and 2011 have revealed a summer population of *c.* 5,000 birds that is joined by up to *c.* 2,000 winter migrants. Ringing of a small number of British Greylag Geese there in July 2011 revealed that none left the islands during the winter, hence it is likely that the summer stock is probably sedentary. The number and distribution of British Greylag Geese continues to increase and present problems in identification of the provenance of Greylag Geese encountered on the winter quarters.

## Spring 2012 survey

The IGC counts were initiated to provide population estimates for the Pink-footed Geese and Iceland Greylag Geese. The counts were timed to take place just after the geese arrive back in Britain, while they are gathered in large numbers at well known roost sites. They also provide important information on the distribution of the geese during the autumn and early winter. However, large autumn flocks soon break up and the geese become much more widely dispersed. Additional spring counts were carried out from 1982 to 1986, from 1988 to 1990 and from 1994 to 1996. Spring is an important time for geese; they feed vigorously, storing nutrient reserves for successful migration and breeding. It is therefore important to have periodic counts of both Pink-footed and Iceland Greylag Geese outwith the autumn and early winter period to establish the important areas for these geese at this time of year.

## Taiga Bean Geese wintering in Britain in 2011/2012

Monitoring of Taiga Bean Goose continued in winter 2011/12 and was again undertaken at the Slamannan Plateau, Falkirk and the Yare Valley, Norfolk. A peak count of 238 birds was recorded at the Slamannan Plateau, a figure slightly lower than the previous ten-year mean (257) (Figure 11). At the Yare Valley, where the numbers of wintering Bean Geese has been declining since 1993/94, the peak count of 86 was lower than in 2010/11, when a peak of 137 geese was recorded (Figure 11). The slow decline of this important flock continues and the peak count remains below the previous ten-year mean (145).

Arrival at the Slamannan Plateau was earlier than in previous years, with the first birds arriving in late September. The first flock of 16 birds was counted on 20 September, increasing to 56 birds a week later. Numbers increased in early October,

By the end of February 2012, Pink-footed Geese had already begun to shift their winter distribution within Britain northwards. Large numbers had left Norfolk in mid January (Jim Scott pers. comm.) and the sites holding the largest number of geese were generally to the north for example at Loch of Strathbeg, the Solway Firth, the Moray Firth and Caithness. The spring survey in late February has confirmed that Orkney supports large numbers of Iceland Greylag Geese throughout the winter. Counts in November and December had shown that an increasing number of Iceland Greylag Geese were present in the early part of the winter and although anecdotally the geese did not appear to decline in number as winter progressed, this has now been confirmed. Typically, Caithness and the northern firths of Scotland also held high counts. However, the Isle of Bute, Loch Lomond and Loch of Lintrathen, all in central Scotland, held over 1,000 birds, suggesting that some Iceland Greylag Geese still move south to winter.

Counts in 1994 to 1996 had shown that 38–51% and 34–53% of the autumn population estimates for Pink-footed and Greylag Geese, respectively, were counted in the spring. The comparable figures for 2012 were 72% and 80%. The reason for this discrepancy, particularly for Pink-footed Geese, is not easily explained. The geese may have been at fewer sites and less dispersed in the landscape. Count coverage may have improved – there has not been a spring census since 1996 and more goose counters may have felt willing to undertake an additional count in the spring. Perhaps fewer Pink-footed Geese are being shot than in the mid-1990s leading to higher over winter survival in mild winters. The higher value for Greylag Geese can, in part, be attributed to more birds wintering on Orkney, which has excellent count coverage. In 1996, Orkney supported 17% of the spring census total; in 2012, the figure was 56%. Whatever the explanations, the high proportion of the autumn population estimate counted in the spring demonstrates the value of this count, so thanks go to all the counters who supported this additional effort.

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reaching a peak of 238 geese. Migration back to the spring stop over sites took place in mid-February; the last 120 birds being recorded on the 25 February. Part of the Slamannan flock, including seven colour-marked geese (see page 24), were located at Akershus, east of Oslo, Norway on 20 March, on spring migration to their breeding quarters.

At the Yare Valley, no geese were recorded in October and the first five birds were seen on 18 November. Numbers increased to 79 on 4 December, and the peak count was made in the new year, as is typical for this site, when 86 were counted on 15 January. On 10 February, 73 birds were still present, but numbers quickly declined and the last three birds were seen on 24 February.

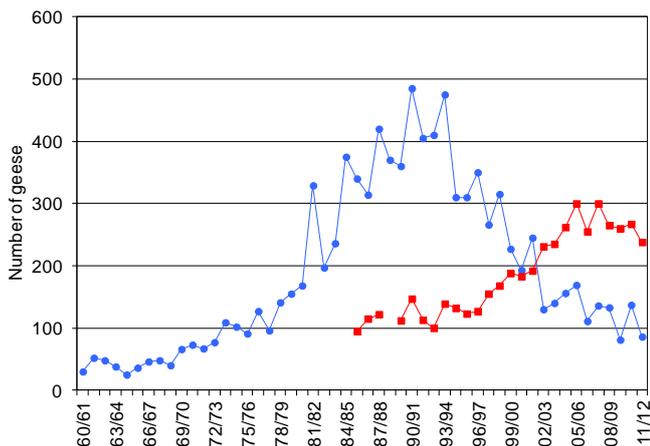


Figure 11. Peak counts of Bean Geese at Yare Marshes (blue circles) and Slamannan Plateau (red squares), 1960/61–2011/12. No data were available for Slamannan Plateau in 1987/88.

## Latest monitoring of British Greylag Geese in Scotland 2011/12

Annual monitoring of all British Greylag Geese is not undertaken, but annual counts and breeding success estimates are conducted at two key areas within northwest Scotland where Greylag Geese are actively managed, namely the Uists (Outer Hebrides) and on Tìree (Inner Hebrides).

Between the 1980s and the mid 2000s, the number of birds at these two locations steadily increased, although the number on the Uists now shows signs of levelling and, on Tìree, numbers are steadily decreasing (Figure 12). A total of 4,292 Greylag Geese was counted on the Uists in late August 2011, a decrease of 24% on the August count in the previous year. However, the weather was poor on the count weekend and the count was considered an underestimate. This is borne out by the count in late February 2012, which found 5,742 geese.

On Tìree, an island-wide census in late August/early September 2011 produced a count of 2,236 birds, a decrease of 15.3% on the count in August 2010. Numbers on Tìree have declined after reaching a high point in 2006 (4,005 birds), presumably reflecting the increase in the number of birds shot annually under licence.

Productivity data were collected from the Uists, with a total of 803 birds aged in August 2011. The percentage of young birds was 24.6% and the mean brood size was 2.84 goslings per successful pair. On Tìree, 1,943 Greylag Geese were aged in late August and early September and brood sizes were collected for 50 families in July. The percentage of young birds in this post-breeding count was 33.2% and the mean brood size was 3.1 goslings per successful pair.

On Shetland, a post-breeding survey found 5,247 British Greylag Geese in early September 2011. Of 109 birds aged, 23.9% were young, with a mean brood size of 1.76 goslings, although both sample sizes were small. At the time of writing, a

Age assessments at the Slamannan Plateau indicated that 2011 was a good breeding year for Taiga Bean Geese wintering in Scotland. Out of a flock of 233 birds, 133 were aged on 10 October, of which 22.6% were young birds. However, this is a very small sample of the total population. Age assessment data were not collected at the Yare Valley.

Many thanks to Angus Maciver (Bean Goose Action Group) and Ben Lewis (RSPB) for the information presented in this article.

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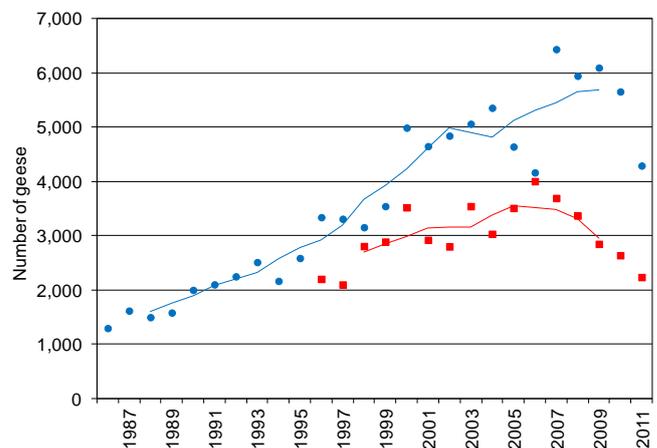


Figure 12. Counts of British Greylag Geese in late August on the Uists, Outer Hebrides (blue circles) and Tìree, Inner Hebrides (red squares), 1986–2011. The five year running means (e.g. mean for August 2009 is from counts for August 2007–2011) are shown as lines. Counts on the Uists in late summer 2005, 2006 and 2011 are considered underestimates.

survey of post-breeding British Greylag Geese on Orkney has been planned for August 2012, in order to update the current population estimate from July 2008 when c. 10,000 birds were counted during an island-wide census, and there is every indication, from RSPB breeding records, that numbers have continued to increase since then.

Thanks go to John Bowler (Tìree), Paul Boyer, Martin Scott, Rebecca Cotton (all Uists) and Paul Harvey (Shetland) for the provision of data presented here.

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## Greenland White-fronted Geese in 2010/11

The Greenland White-fronted Goose Study completed the 29th year of coordinated counts of Greenland White-fronted Geese throughout Britain in 2010/11, with coverage in Ireland organized by the National Parks and Wildlife Service. From counts undertaken at regular wintering resorts, the global population estimate for spring 2011 was very encouragingly up by 13% on the previous winter at 25,765 (Figure 13).

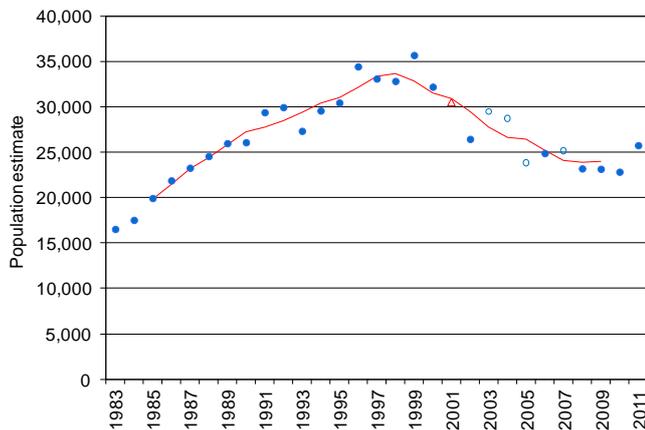


Figure 13. Population estimates of Greenland White-fronted Geese, 1983–2011 (blue circles). The five-year running mean (e.g. mean for 2008 is from population estimates for 2006–10) is shown as a red line. The open circles indicate estimated values for years when data were missing from Ireland. The open triangle indicates the estimated value for 2001 when data were missing on account of the outbreak of Foot and Mouth disease that year.

In Ireland, the autumn 2010 and spring 2011 totals were 11,035 and 12,510, respectively; well up on the counts from the previous season (9,992 and 11,003, respectively). As usual, the majority of birds (over 70%) were counted at Wexford Slobbs, and over 1,100 geese were present for most of the winter at the Lough Foyle/Lough Swilly complex. Although the Midland Lakes complex in total supported over 300 geese, very few other resorts away from the Shannon Callows held more than double figures, as has been the case in most recent years.

In Britain, the autumn 2010 count was lower than that of the previous year (12,435 compared to 13,269), but the spring 2011 count was 13,225, well up on 11,841 in spring 2010. As usual, Islay held more than 50% of the British total (6,911 in spring 2011 compared to 5,744 the previous year), but the Kintyre sites also held up with 732 counted at Rhunaharoinne and 1,866 at Machrihanish during the spring census period. Of the other sites, however, only Tiree (880), Stranraer (318), Coll (277) and Lismore (230) exceeded 200 birds during the spring count.

The reason for the increases throughout the range was a good breeding season in summer 2010. On Islay, 22.9% of birds aged ( $n = 6,820$ ) were young of the year, the third highest ever recorded there since 1962, and well above the average of 13.9% for the years 1962–2010 inclusive and the highest since 1985 when the geese returned with 27.3%. Mean brood size on Islay was also above average at 3.93 (based on 112 families). The overall percentage of young in Britain was 21.2% and mean brood size was 3.37 young per successful pair (the mean family

size very much as usual) (Figure 14). Curiously, in Ireland, the overall proportion of young was lower, 14.4% amongst 6,346 aged with a mean brood size of 3.3 young per successful pair. The good breeding success was almost certainly due to the mild snow-free conditions in spring 2010, followed by a warm and dry summer, conditions expected to favour reproductive success (see *GooseNews* 10). Given the general poor reproductive success during a long run of summers since the mid-1990s, one good year is unlikely to make a long term difference to the fortunes of this small population, especially as the breeding success in summer 2011 returned to the previously low levels below 10% that has characterized recent years.

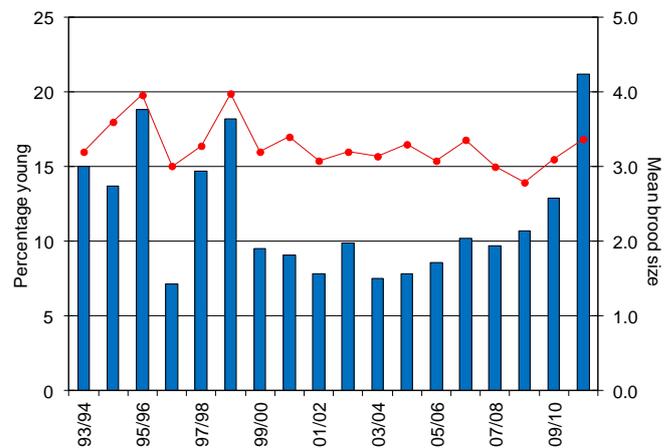


Figure 14. The mean percentage young (blue columns) and mean brood size (red circles) of Greenland White-fronted Geese in Britain, 1993/94–2010/11.

Great concern was expressed at the flyway workshop held on Islay in February 2009 about maintaining the traditional range and distribution of Greenland White-fronted Geese in winter. As a result, there has been much discussion about how to safeguard the small wintering flocks in Britain and Ireland that are such a feature of this population, but that currently do not enjoy formal protection because they fall below the 1% criterion for national importance or other regional recognition. Analysis during the mid-1990s showed that the numerically smallest flocks were those showing the most serious declines and were those most likely to go extinct.

Thanks to financial support from SNH under their Species Action Framework, the Greenland White-fronted Goose Study and WWT (assisted by Royal Society for the Protection of Birds staff at some sites) undertook a study of conditions at many of the sites used by these smaller flocks over the last two winters. The specific aim was to assess factors that could be addressed to improve the status of these little flocks and make recommendations for actions to avoid the extinction of as many flocks as possible.

Land use, disturbance, changes in agricultural practice and a range of other factors were assessed in the context of historical knowledge, with major input from the local counters and farmers in the immediate vicinity. In reality, it proved extremely difficult to understand why goose numbers at specific sites should be small and declining, indeed it was often difficult to

see habitat related limits to suitable feeding, loafing and roosting areas, since suitable or even optimal habitat often seemed super-abundant within their home ranges. However, geese did seem to prefer improved pasture (with shorter swards and more fertilizer application with medium to heavy grazing and fewer rushes than those generally available) which may suggest that active management of grassland is important for the geese. With increasing declines in marginal agriculture in western Scotland, the reduction in grass management and abandonment of pastoral agricultural could have serious consequences for the geese, where once there was no such threat. Perhaps more surprising, a reanalysis suggested that

numbers in the slightly larger flocks showed more of a tendency to decline more rapidly than those of the very small flocks. The report of this work can be found on the web via this link: [greenlandwhitefront.org/publications/small-sites-report/](http://greenlandwhitefront.org/publications/small-sites-report/)

Taken from Fox, AD, I Francis & A Walsh. 2011. *Report of the 2010/11 International Census of Greenland White-fronted Geese*. Greenland White Fronted Goose Study. Kalø, Denmark. The full report can be downloaded from [monitoring.wwt.org.uk/reports](http://monitoring.wwt.org.uk/reports)

Tony Fox

### On-line access to publications on Greenland White-fronted Geese

All annual census reports produced by the Greenland White-fronted Goose Study and National Parks and Wildlife Service since 1982, together with a wide range of other published and unpublished literature related to survey, monitoring and studies of this population over the last 30 years, are available to download at [gwf-conservation.wikispaces.com/Links+and+resources](http://gwf-conservation.wikispaces.com/Links+and+resources).

## Breeding success of European White-fronted Geese wintering in Britain in 2011

Counts of European White-fronted Geese were made at three localities, WWT Slimbridge, Gloucestershire, Church Farm Marshes, Suffolk, and Blakeney Fresh Marshes in Norfolk. In total, 538 geese were aged and overall, the percentage of young present in winter flocks was 35% (an increase of 9.2% on 2010/11).

The percentage of young differed between the three sites. At Church Farm Marshes, 203 geese were aged of which 50.7% were young birds. At Blakeney Fresh Marshes, 52 birds were aged of which 34.6% were young, while at WWT Slimbridge, 283 birds were aged of which 24% were young (Figure 15).

In a sample of 116,643 birds aged at wintering sites in Germany, The Netherlands and Belgium, 20.7% were first winter birds. The percentage of first-winter birds differed within the wintering range, being lowest in Germany (19.2%) and the Netherlands (19.5%) and highest in Belgium (31.7%). Age-ratios recorded in Britain (35% young) fit this pattern showing that more successful birds move towards the south western edge of the wintering range.

One of the main influences of the breeding success of tundra nesting goose species is the cyclic pattern of lemming populations. Breeding success generally decreases in years of low lemming abundance as a result of predators switching from

lemmings to birds. In general, research stations in the arctic recorded a low abundance of lemmings, however, low numbers of predators were also recorded (mainly Arctic Foxes).

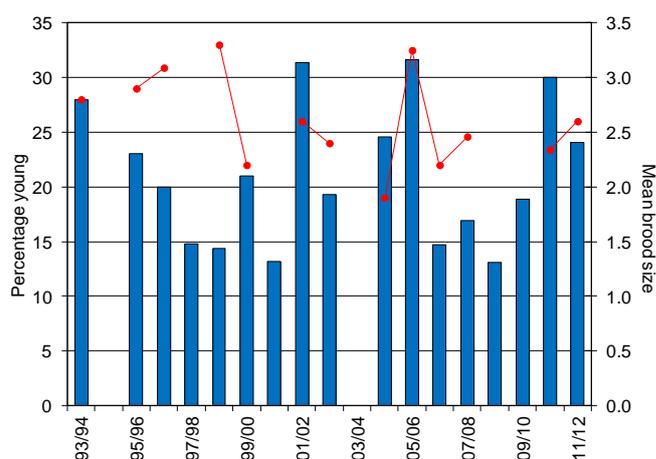


Figure 15. The mean percentage of young (blue columns) and mean brood size (red circles) of European White-fronted Geese at WWT Slimbridge, 1993/94–2011/12. Note, no data were collected during some years.

Kane Brides and Kees Koffijberg

## Greenland Barnacle Goose wintering in Scotland in 2011/12

During 2011/12, wintering Greenland Barnacle Geese were counted at seven of the most important sites in Scotland: Islay, Colonsay/Oronsay, Danna, Coll, Tiree, North Uist and South Walls, Orkney. The highest numbers are regularly seen on Islay, where the peak coordinated count of 46,412 in March 2012 was 3.5% higher than the peak in the previous winter. The Islay population size is estimated from the mean of the December and March 'international' counts (where emphasis is placed on obtaining greatest coordinated coverage) and in winter 2011/12, this figure was 44,503 (Figure 16). Two of the other

sites had maximum winter counts higher than the previous winter; North Uist (3,719 of 2,546) and Tiree (4,295 of 4,190).

Greenland Barnacle Geese had another good breeding season in 2011, and this probably accounts for the slight increase in numbers at the key sites in Scotland (Figure 16). In total, 8,095 geese were aged on Islay and Tiree and brood size was assessed for 148 families (Table 3). The overall proportion of young was 11.0% and the mean brood size 2.01 young per successful pair.

# Progress reports

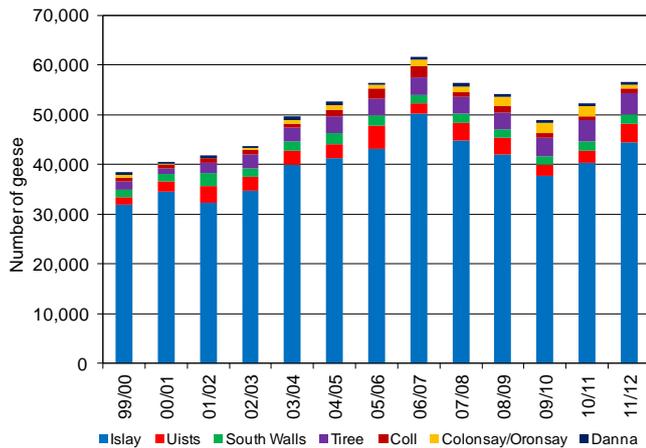


Figure 16. Winter peak counts at seven of the most important wintering sites for Greenland Barnacle Geese in Scotland, 1999/00–2011/12.

Following the steady rate of increase up to 2006/07, combined counts from key sites suggested a subsequent decrease in the size of the Scottish wintering population up to 2009/10, but

## Svalbard Barnacle Goose monitoring in 2011/12

During 2011/12, complete counts of Svalbard Barnacle Geese on the Inner Solway rose rapidly from just 721 birds on 5 October to 30,653 on 19 October after what had been a very slow arrival period – the first birds recorded on the Solway, a week later than usual, were 16 on the 24 September (Figure 17).

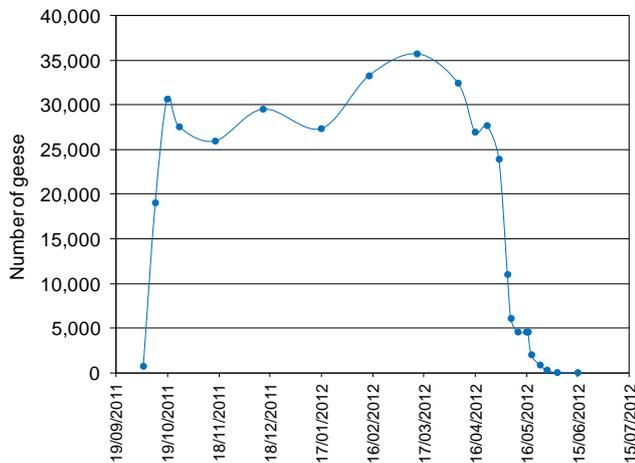


Figure 17. The total population of the Svalbard Barnacle Goose recorded on the Inner Solway from October 2011 to May 2012.

The total number of geese counted on the Solway then fluctuated, as in previous years, mainly in relation to count visibility conditions and goose dispersal. Due to this count variation, with possible inaccuracies and the chance of double-counting, an adopted count total for the population is usually derived by averaging those counts within 10% of the maximum recorded during the winter. In 2011/12, the counts of 33,261 on 14 February, 35,727 on 13 March (the maximum count recorded) and 32,451 on 6 April 2012, fulfilled this criterion and are thus averaged to produce an adopted population total of 33,900 Barnacle Geese (rounded up to the nearest 100) a decrease of 2,000 birds on the previous winter's estimate of

this has been reversed in the most recent two seasons with increases in both 2010/11 and 2011/12, no doubt reflecting these better than average breeding seasons in the last two years

Table 3. The proportion of young and mean brood size of Greenland Barnacle Geese recorded during winter 2011/12.

|       | Total aged | % young | No. of broods | Mean brood size |
|-------|------------|---------|---------------|-----------------|
| Islay | 7,820      | 11.2    | 135           | 2.1             |
| Tiree | 275        | 5.1     | 13            | 1.07            |
| Total | 8,095      | 10.99   | 148           | 2.01            |

Special thanks go to Malcolm Ogilvie and John Bowler for providing age counts. Winter counts at the key sites were provided by Tracey Johnston and Morven Laurie (on behalf of the Argyll goose counts), John Bowler, Pat Batty, Ben Jones, Morven Laurie, Mike Peacock, Martin Scott, Rebecca Cotton and Lee Shields.

Carl Mitchell

35,900 geese. Thirteen coordinated population counts were carried out from October to April, the frequency having been reduced due to changes in funding levels for the Solway Goose Management Scheme monitoring budget. Weekly counts were still conducted in the arrival and departure periods of October 2011 and April 2012, respectively, with monthly counts in the mid-winter period from November 2011 to March 2012.

The first seven Barnacle Geese recorded at RSPB Loch of Strathbeg were on 15 September 2011. Numbers rose rapidly to a peak of 277 birds by 9 October and then declined quickly to typically just over 100 by December with 50–70 birds remaining until early April 2012.

The breeding success of Svalbard Barnacle Geese observed in flocks on the Inner Solway from October 2011 to November 2011, from Eastpark in the east to Mersehead in the west, ranged from 6.1% to 23.5% (compared with 5.6% to 21.5% in 2010/11) with a mean of 13.9% young from 13 flocks with 5,279 geese sampled (10.8% from 13 flocks; 8,092 geese sampled in 2010/11). Across the same area, the total number of broods sampled was 124, with a mean brood size of 2.1 young (ranging from 1–5) being recorded per family (compared with a mean of 2.5 young, range 1–5, n = 65 in 2010/11).

A notable trend that has developed in this population over the last two decades, perhaps unexpected in the face of perceived global warming acting at sites both temperate and Arctic along its flyway, is a tendency for a proportion of the birds to stay longer on the Solway, particularly on the saltmarsh at Rockcliffe Marsh, Cumbria, and especially on the newly accreted marsh vegetation in that tidal area at the eastern end of the Solway. This marsh is now acting as a spring pre-migration site as well as a wintering ground for over a quarter of the population in most years up to and sometimes beyond the middle of May (Figure 18).

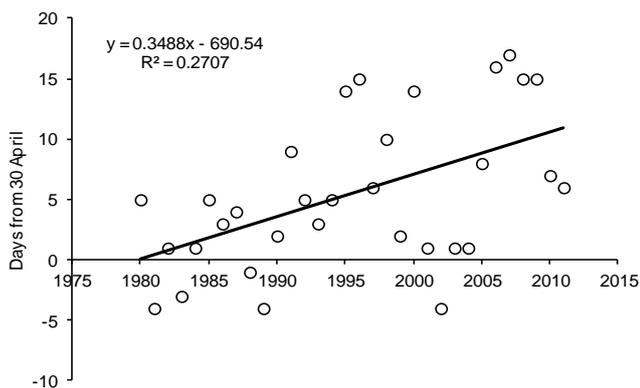


Figure 18. Last day of the yearly count season (relative to 30 April) on which 25% of the Svalbard Barnacle Goose population was still present on the Solway.

Although the sample size has been small, satellite tracking since 2006 has shown that some, if not all, of these late-leaving birds can by-pass traditional foraging sites in Norway, and simply head more or less directly to Svalbard completing the journey in as little as 36 hours. Also for one bird tagged in 2011, the WWT tracking website revealed that it was then possible to make a breeding attempt on an offshore island at Prins Karls Forland, Svalbard. In May 2012, over 4,500 geese remained on Rockcliffe Marsh beyond the middle of May, with 850 still present on 24 May and 280 by 28 May. Elsewhere along the flyway, in Helgeland, a large proportion of the staging Barnacle Geese left very abruptly at an earlier date than usual, with around two-thirds having moved northwards by 15 May. More birds were present in early May at several sites monitored regularly than has been typical in recent years (Paul Shimmings pers. comm.). Hilde Henningsen of Longyearbyen School, Svalbard reported seeing or hearing pairs or small groups of Barnacle Geese at Colesbukta on 12/13 May, a week or so earlier than usual, and at Brentskardet/Eskerdaalen (past the far end of Adventdalen) on the evening of 17 May 2012. How do

such observations nearly 2,000 miles further north at the opposite end of the flyway square with the tendency for a proportion of the birds to remain longer on the Solway? The answer is that there is also a less obvious trend for the first 25% of the population to depart earlier from the Solway.

Up to four different leucistic Barnacle Geese were recorded in winter 2011/12 including a family group of three, possibly the same group as last winter. The leucistic birds were mainly seen in the Bowness to Grune area, with a Ross's Goose tending to reside on Rockcliffe Marsh, Cumbria, occasionally being seen on the north side of the Solway at Caerlaverock. Other geese of note included a first-year Red-breasted Goose seen at Caerlaverock at the end of January and later in the Southerness area, a Todd's Canada Goose seen at Caerlaverock and along the River Nith and a family of three Pale-bellied Brent Geese seen near Powillimount with Pink-footed and Barnacle Geese at the end of March, with a single seen at the beginning of May on the Caerlaverock saltmarsh. Single Greenland White-fronted Geese were recorded with the Pink-footed Goose flocks at Upper Locharwoods and Hurkledale during the winter.

Thanks go to Mike Carrier and Bob Jones for conducting census counts in the Rockcliffe/Burgh Marsh area, Dave Blackledge for counts covering the Bowness to Grune route, Marian & Dave Rochester for covering the Borgue to Wigtown route, David & Hilary Hawker for covering Kirkcudbright to Rascarrel, Peter Williams for covering Rascarrel to Sandyhills and Ben Mitchell (who replaced Dave Fairlamb as counter) for covering the Southwick area to Drumburn. Counts in the Caerlaverock area were also made by Mike Youdale and Brian Morrell. A welcome addition to the count team for coverage in the Wigtown area in March 2012 was Paul Tarling based at RSPB Crook of Baldoon.

Larry Griffin

## Breeding success of Dark-bellied Brent Geese wintering in Britain in 2011/12

The surveying of the breeding performance of Dark-bellied Brent Geese wintering in Britain entered its 27th consecutive year of recording. Counts were made by a network of experienced volunteer observers across Britain. Between September 2011 and April 2012, 80,396 geese were aged at 12 estuaries or coastal sites. The overall proportion of young was 16.2% and of the 578 broods recorded, the mean brood size was 2.26 young per successful pair (Figure 19).

As reported last year, this Russian tundra breeding species experiences better than average breeding success during years when rodent numbers are high or predator numbers are low. Data collected in Britain in 2011/12 indicate that the breeding success of Dark-bellied Brent Geese was above the recent average (9.5%, 2001/02–2010/11) and 3.5% higher than the previous year. Reports from monitoring stations in the breeding grounds in arctic Russia indicate that rodent and predator numbers were generally low in 2011 (see [www.arcticbirds.net](http://www.arcticbirds.net)), thus it seems likely that the low predator abundance allowed geese to raise good numbers of young.

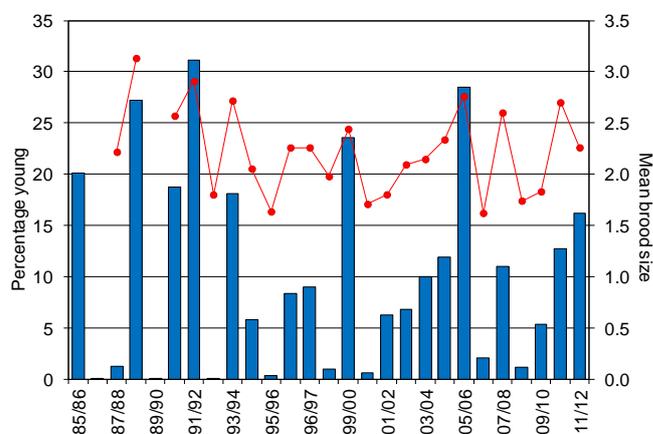


Figure 19. The percentage young (blue columns) and mean brood size (red circles) of Dark-bellied Brent Geese in Britain, 1985/86–2011/12. No brood size data were available for 1985/86, 1986/87 or 1989/90.

# Progress reports

The proportion of young varied throughout the winter from 7.9% in September, peaking at 18% in March. Flocks on The Wash held the highest proportion of young (34%) whereas the lowest proportion was observed at the Colne Estuary (6.4%), though both of these estimates were based on small sample sizes. The highest numbers were aged at the Thames (24,809 birds) and Blackwater (18,481 birds) estuaries.

As always our thanks go to the network of experienced fieldworkers who undertook these age assessments for the 27th consecutive winter. We are extremely grateful for their help, advice and continuing support. A more detailed account of the results is available on our website [Monitoring.wwt.org.uk/species/dark\\_brent.php](http://Monitoring.wwt.org.uk/species/dark_brent.php)

Kane Brides

## Breeding success of East Atlantic Light-bellied Brent Geese in 2011/12

Breeding success of the East Atlantic Light-bellied Brent Geese wintering in Britain was lower than the previous year (Figure 20). Counts were received from Lindisfarne, Northumberland where individual counts were made each month from November to February. In total, 1,231 birds were aged of which 106 (8.6%) were young. No brood size data were collected. The largest sample, which avoids sampling the same birds twice, was undertaken on 16 December; when 525 birds were aged and 26 (4.9%) were young.

Britain supports less than half of the total population, the remainder wintering in Denmark. Combining the largest sample from Lindisfarne (taken on 16 December) with age counts undertaken in Denmark gave an overall sample of 2,274 birds aged of which 101 (4.4%) were young. In Denmark, 36 families were recorded with a mean brood size of 2.11 goslings per successful pair. Low productivity in this population is a cause for concern and the reasons for this are not well understood (see page 5).

Our thanks go to Andrew Craggs, Kevin Clausen, Ian Davison, Lydia Hind and Ian Kerry for undertaking the counts.

## Recent success with capture and marking

Catches at WWT Centres targeting over-wintering swan species continued during 2011/12. In total, 149 Whooper Swans were captured during two catches at WWT centres. These catches yielded 15 new and 11 recaptured birds at Martin Mere along with 66 new and 57 recaptures at Caerlaverock. Kane Brides teamed up with the Icelandic Institute of Natural History, Sverrir Thorstensen and Ólafur Einarsson during August 2011 to round up moulting Whooper Swans on the summering grounds in the Skagafjörður and Myvatn areas of northern Iceland. In total, 157 birds were captured, comprising 104 new and 53 recaptures. In addition to birds caught by WWT, Craig Ralston of Natural England made a successful cannon net catch of four Whooper Swans at North Duffield Carrs in Yorkshire.

Several attempts were made to capture Bewick's Swan at Slimbridge during the winter, however all were unsuccessful. Tony Martin continued to capture small numbers at Dunkirk, Ely, and on the breeding grounds, Maria Weiloch and Andrey Glotov from the Nenetski Nature Reserve, successfully caught 68 birds, of which 62 were newly ringed.

On 12 October 2011, WWT, together with the Bean Goose Action Group and local ringers caught 15 Bean Geese on the Slamannan Plateau, near Falkirk. All birds were ringed and

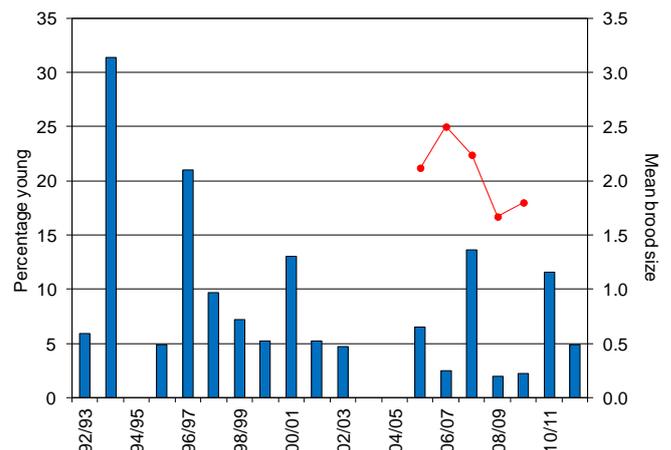


Figure 20. Proportion of young (blue columns) and mean brood size (red circles) in flocks of East Atlantic Light-bellied Brent Geese measured at Lindisfarne, 1992/92–2011/12. No data were collected in 1994/95, 2003/04 and 2004/05.

Kane Brides

fitted with grey neck collars. Since ringing, seven of these geese were seen on spring migration in southern Norway.

A catch of 16 Greenland White-fronted Geese was made on 2 March 2012 at Mains of Duchrae, Loch Ken by WWT. All geese were marked with orange neck collars and white leg rings. During spring 2012 an international team caught 66 new birds and recaptured two birds at Hvanneyri in western Iceland (see page 6). During this trip, two birds of particular interest were noted. D7Z and D8X are related birds (D7Z being the mother and D8X her son) and were caught and ringed together in November 1996 in Wexford, together with F7U (father) and several siblings. F7U was never seen after winter 1996/97 but the rest of the family remained together. In the last few years the other marked juveniles from this family have not been sighted, but D7Z and D8X have wintered together every year since capture. Both have been seen together at Hvanneyri in western Iceland in ten springs and five autumns. Many parent/offspring relationships have endured for 7–9 years, however these two birds have broken all records when it comes to extended parent-offspring relationships, having been together now for 16 years.

Last winter was another disappointing catching season for the Irish Brent Goose Research Group. Attempts at inter-tidal

catches at Strangford Lough, County Down, in the autumn were frustrated by erratic tidal conditions and bird behaviour, which resulted in only two minor catches, involving a total of only three birds. This was, however, followed up by two more successful efforts in February, each at new catch locations; in South Dublin on college sport pitches at Sandyford, and in County Wicklow at a golf driving range in Greystones, involving catches of 61 and 73 geese, respectively. As these two flocks were thought to be at least partly connected, and to involve birds separate from the North Dublin flocks, where large numbers were marked in February 2010, the catches were particularly pleasing. In Iceland, the irregular pattern of usage of potential sites was again an influence, and consequently no catch attempts were made. Thanks go to Kerry Mackie and Stuart Bearhop, the cannon-netters and the teams who helped (including those present when catches were unsuccessful).

Re-sightings of marked Light-bellied Brent Geese in 2011/12 have (at the time of writing) generated 10,454 records of 1,858 individuals, received from 218 observers. The numbers of records/individuals are likely to increase, as entry of data from the Dublin area, from Matt Silk, a PhD student from the University of Exeter, is currently ongoing. The re-sighting database now holds more than 100,000 records of colour ringed individuals. In addition to a general thank you to everyone involved, the amazing effort of the whole Dublin area volunteer team of ring-readers is again particularly recognised, as are the individual efforts of Alain Livory and Roselyne Coulomb, who very much keep on top of flocks which overwinter in Normandy, France.

On the Solent, Pete Potts and his team managed to catch 20 Dark-bellied Brent Geese by cannon-netting, bringing the total number to 249 birds now colour marked in this area. In January 2012, Highland Ringing Group caught ten Light-bellied Brent Geese from the Greenland/Svalbard (East Atlantic) population – a joint venture with Preben Clausen of Denmark.

The annual round-up of summering geese by Dartford Ringing Group included 201 Greylag Geese (120 newly ringed and 81 recaptures) and 133 Canada Geese (104 newly ringed and 29 recaptures).

Summer 2011 also saw four successful round-ups of breeding/summering Greylag Geese at Loch of Hundland, Birsay on Orkney. Two attempts were made using corrals, catching 85 geese on 10 July and another 24 geese on 12 July. A further two birds were caught nearby by hand on 15 July. In

total, 110 birds were captured and ringed in 2011, comprising 35 adults and 75 goslings. The first round up of moulting Greylag Geese on Shetland was also carried out by Shetland Bird Club and WWT, and yielded 15 birds. Finally, Nigel Clark and others from the BTO began a Greylag Goose colour marking project in the Norfolk Broads in summer 2012, capturing 27 birds which were fitted with orange neck collars. They are also starting a project based around the Nunnery reserve in Thetford on Canada and Greylag Geese.



Ciaran Hatsell ringing a Whooper Swan in Iceland (Kane Brides)

Note that observations of colour-marked geese and swans in the UK may be reported to [colourmarkedwildfowl@wwt.org.uk](mailto:colourmarkedwildfowl@wwt.org.uk). See also Steve Roe's article on reporting colour-marked geese and swans rings on page 11.

Thanks to Larry Griffin, Carl Mitchell, Craig Ralston, Alan Leitch, Roger Taylor, Tony Fox and Graham McElwaine for their contribution to this article.

**Kane Brides**

# Conservation and research news

## International Flyway management Plan for Greenland White-fronted Geese

The Greenland White-fronted Goose is classified as Endangered under IUCN Red Data List criteria and is listed as a priority species under the UK's Biodiversity Action Plan because of the rapidly declining size of the global population since the late 1990s. It is one of four birds listed under Scottish Natural Heritage's (SNH) Species Action Framework for urgent conservation actions, which enabled the development of a flyway management plan for Greenland White-fronted Geese. Back in 2009, a workshop on Islay was hosted by SNH and the Greenland White-fronted Goose Study (GWGS), an international specialist group that has been working to conserve the geese for the last 30 years. Fifty participants from Ireland, Scotland, England, Wales, Northern Ireland, Iceland, Greenland, Denmark and Germany attended, with preparatory inputs from Canada. Priorities to halt the declines were drawn up under a draft International Action Plan, accessible at: [www.unep-aewa.org/meetings/en/mop/mop5\\_docs/pdf/mop5\\_27\\_draft\\_ssap\\_gwfg.pdf](http://www.unep-aewa.org/meetings/en/mop/mop5_docs/pdf/mop5_27_draft_ssap_gwfg.pdf)

More information on the workshop can be found at: [gwfg-conservation.wikispaces.com/Islay+international+workshop](http://gwfg-conservation.wikispaces.com/Islay+international+workshop)

In the interim since the 2009 workshop, several developments have already helped support and improve the situation for the geese outside of the formal planning process:

- In 2011, Iceland designated a major wetland of international importance under the Ramsar Convention in western Iceland critical for Greenland White-fronted Geese as a refuelling site on their migratory flights between British and Irish wintering areas and Greenland.
- The Scottish Government prioritised conservation management of Greenland White-fronted Geese under their 2011 Goose Policy Review.
- SNH has surveyed the needs of the small and vulnerable wintering sites for these geese in Scotland, to improve management at these and at major wintering sites.
- Further research and survey work has been undertaken collaboratively in Greenland, Iceland, Scotland and Ireland.

Increasing evidence suggests recent poor breeding relates to spring snow in west Greenland that could be a decadal cyclical climate pattern; a modest increase in numbers occurred after an exceptionally successful breeding season following the snow-free spring and mild summer of 2010.

After widespread consultation and discussion, the Plan was finally signed off at the Meeting of the Parties (MOP) to the African-Eurasian Waterbird Agreement (AEWA) in May 2012 in La Rochelle, western France. The regular MOP brings together representatives of 67 governments and many other interested organisations every three years to discuss conservation needs of migratory waterbirds and prioritise actions needed to conserve them. The ratified plan for Greenland White-fronted Goose is one of several single species action plans developed for particular taxa with conservation problems in recent years, but its formal adoption as an AWEA Plan means that the recommendations for actions can now be

implemented. Now at last there is an agreed framework of cooperation and prioritised actions in place to better safeguard the population in the future.

The Plan broadly calls for:

- improved monitoring and research into the causes of population decline;
- actions on wintering areas in UK and Ireland, and stop over areas in Iceland, to ensure that geese return to Greenland in the best condition for successful breeding;
- urgent efforts to further reduce unnecessary causes of death – for example, through collision with man-made structures, illegal killing or killing on migration routes;
- measures to further improve feeding habitats and reduce conflicts with humans – especially in agricultural areas; and
- improved protection and management of important areas used by the geese in all parts of their international range.

The adoption of this Plan represents a breakthrough in setting priorities for this threatened population, which in recent decades has been exposed to unprecedented environmental change. The plan will now provide a unique opportunity for concerted action by all the countries hosting this charismatic goose.

David Stroud

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## 14th meeting of the Goose Specialist Group

The Goose Specialist Group (GSG) of both the IUCN-Species Survival Commission and Wetlands International seeks to strengthen contacts between all researchers on migratory goose populations in the northern hemisphere. Annual meetings have been held since 1995. At present, about 400 people have joined the group.

The 14th meeting of the GSG was held in Steinkjer, Norway from 17–21 April 2012 and was an outstanding success. The meeting was hosted by the University College in Nord-Trøndelag (HiNT) at the Faculty of Agriculture and Information Technology in Steinkjer. The meeting was sponsored by the hosts at HiNT, as well as from the Norwegian Directorate for Nature Management and the Department of the Environment at the County Governors Office (Fylkesmannen i Nord-Trøndelag). We greatly acknowledge these sponsors.

Paul Shimmings, Per Ivar Nicolaisen and Jan Eivind Østnes supported by Sonja Ekker, Rolf Terje Kroglund and Tor Kvam did an excellent job in organizing this meeting. The scientific committee, consisting of Jouke Prop, Carl Mitchell, Paul Shimmings and Ingunn Tombre, selected 46 oral presentations and six poster presentations for this conference, which focussed on Svalbard populations of Pink-footed and Barnacle Geese, and of Greylag Geese nesting in Norway and wintering in Spain, but the programme included also more general themes, including;

- how Greater White-fronted Geese follow the 'green wave' (new growth of forage plants) during spring migration though central Russia.

- the breeding biology of the increasing population of Barnacle Geese on Kolguyev Island, Russia.
- a circumpolar meta-analysis on the impact of global warming on breeding success of arctic-nesting geese.

In addition, special workshops were held on marking techniques, reporting of marked geese through websites like [www.cr-birding.org](http://www.cr-birding.org) and [www.geese.org](http://www.geese.org) to help volunteer observers submitting their observations, monitoring goose numbers, and a workshop on the impact of hunting on goose populations.

The marked increase in numbers in most, but not all, goose populations has been met with a request to control goose numbers at a desired level in several countries. This, however, requires sound knowledge about the impact of control measures on the population dynamics of geese, and such knowledge is lacking in most European countries. It was therefore encouraging to hear that both Denmark and Norway have made funds available for research into such control measures envisaged for the population of Pink-footed Geese nesting on Svalbard, which is one of the best studied goose populations in the world, with both a high proportion of marked individuals and very accurate annual censuses of the entire population.

The conference proceedings will be published in the journal *Ornis Norvegica* ([boap.uib.no/index.php/ornis](http://boap.uib.no/index.php/ornis)), a peer-reviewed, online and open access journal publishing papers in all fields of ornithology.

During the mid-conference excursion we saw thousands of spring-staging Pink-footed Geese and White-tailed Eagles in the beautiful Norwegian fjords. Many neckbands of Pinkfeet were read, and we received a great welcome in Beitstad, Vellamelen by the local school children, dressed up as geese with pink legs,

who celebrate the spring migration of Pink-footed Geese during a special Goose Day.

The GSG is part of a much larger family of Specialist Groups under the umbrella of the IUCN-Species Survival Commission and Wetlands International. The chairman reported briefly about the recent meeting in Abu Dhabi of all Specialist Group Chairs ([tinyurl.com/c6zm3a2](http://tinyurl.com/c6zm3a2)) and at the end of the meeting a renewed contract with Wetlands International was signed by the chairman on behalf of the GSG-board.

At the closure of the meeting the chairman once more called upon all participants that further financial support for the continuation of the work of the Goose Specialist Group is needed. Anyone who would like to contribute even the smallest amount is kindly requested to donate to the charity “Stichting Support Meetings of the Goose Specialist Group”. This will not only allow this charity to support GSG-members to attend our regular meetings, but also to support the website to track marked geese [www.geese.org](http://www.geese.org), which from now on will be run officially by the GSG.

The next meeting will be held in Arcachon, France, from 8–11 January 2013. This meeting will be hosted by ONCFS at the Palace of Congress of Arcachon. The main topic will be Brent Geese and Eelgrass (*Zostera*); in January 50,000 Dark-bellied Brent Geese feed on the extensive eelgrass-beds in the Bassin d’Arcachon. The meeting will consist of two and a half days of talks and posters and there will also be a mid-conference excursion to the basin and to the ornithological reserve of Teich. A special conference website will be soon established which can be accessed through ONCFS’s own website ([www.oncfs.gouv.fr](http://www.oncfs.gouv.fr)) and the GSG website ([www.geese.org/gsg/](http://www.geese.org/gsg/)).

**Bart Ebbinge**



The 14th meeting of the Goose Specialist group was attended by 70 participants from 18 countries.

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## GSG Goose Bulletin

The *Goose Bulletin* is the official bulletin of the Goose Specialist Group (GSG) of the IUCN-Species Survival Commission and Wetlands International. From February 1991 to November 1996, regular bulletins were mailed to interested goose biologists from the National Environmental Research Institute in Kalø, Denmark. The 8th and last issue appeared in November 1996. During the GSG meeting in Höllviken in October 2009, it was decided to restore this bulletin in a digital form. *Goose Bulletin* appears periodically, but at least once a year, in electronic form; PDF versions of issues 8 to 12 are available to download at [www.geese.nl/gsg/](http://www.geese.nl/gsg/) (then click on the *Goose Bulletin* link).

The bulletin aims to improve communication and exchange information amongst goose researchers throughout the world. It publishes contributions covering goose research and monitoring projects, project proposals, status and progress reports, information about new literature concerning geese, as well as regular reports and information from the Goose Database.

Contributions for *Goose Bulletin* are welcomed from all interested goose researchers and should be sent as a Word file to the Editor-in-chief, Johan Mooij ([johan.mooij@bskw.de](mailto:johan.mooij@bskw.de)). Contributions for the coming 15th issue should be sent to Johan before 31 September 2012.

Johan Mooij

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The Goose & Swan Monitoring Programme (GSMP) monitors numbers and breeding success of geese and swans in the UK during the non-breeding season. GSMP is organised by WWT in partnership with JNCC (on behalf of CCW, NE, NIEA) and SNH.

The Joint Nature Conservation Committee (JNCC) is the statutory adviser to Government on UK and international nature conservation, on behalf of the Northern Ireland Environment Agency, the Countryside Council for Wales, Natural England and Scottish Natural Heritage. Its work contributes to maintaining and enriching biological diversity, conserving geological features and sustaining natural systems.



## Goose & Swan Monitoring