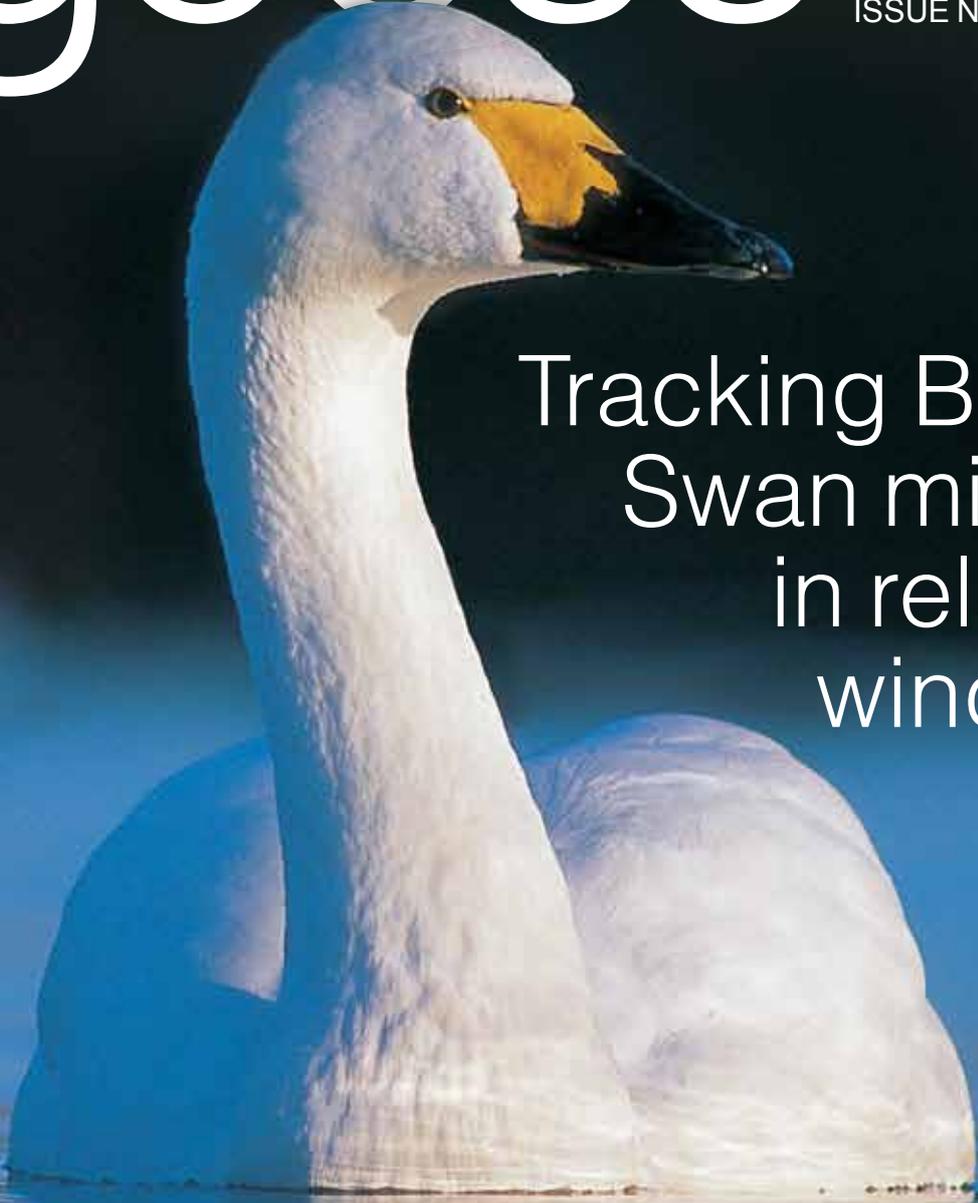


The newsletter of the Goose & Swan Monitoring Programme

goose news

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Tracking Bewick's Swan migration in relation to wind farms

**Migration pathways and movements of
Pink-footed Geese within the UK**

Light-bellied Brent Geese on the Moray Firth

**The effects of environmental change on
Greenland White-fronted Geese**

**Latest results from 2013/14
GSMP surveys**



Editorial

The Goose & Swan Monitoring Programme (GSMP) is well placed to help assess the abundance and distribution of native geese and migratory swans in the UK. An important part of this is ringing, which has been an invaluable tool in helping to understand the movements of wildfowl, not only major migratory movements across their flyways, but also more local movements within the UK. Studying the movements of individual birds in detail is fast developing as micro-electronics become smaller and lighter. Three articles in this edition demonstrate the value of using current telemetry techniques to monitor the movements of individual geese and swans. The combination of broad brush movements, revealed through counts, and the very fine scale location and movements of individuals is a powerful tool. For example, our understanding of the timing of movements of Pink-footed Geese through the UK Special Protection Area (SPA) network and the feeding distribution of the geese in relation to SPAs has been enhanced by the deployment of Global Positioning System (GPS) tags (page 8). Ed Burrell's article demonstrates how daily movement data can be used to determine connectivity between the feeding areas and remote roosts of Greenland White-fronted Geese on Islay (page 14).

Three articles in this edition demonstrate the value of using current telemetry techniques to monitor the movements of individual geese and swans.

The long distance migratory movements of individual Bewick's Swans, especially in relation to proposed offshore wind farm developments, have also been revealed through the use of similar tags (page 6).

We have made some changes to the format of *GooseNews* this year. Whilst the aim is still to report on the previous winter season and bring you progress reports on ongoing projects, the occasional facelift is part of the development of the newsletter. Please feel free to provide feedback on any aspect of *GooseNews*. If you have a story to share about swan and goose monitoring that you are involved with please feel free to drop me a line (see back cover for contact details).

Finally, hopefully you will be aware of the upcoming GSMP workshop to be held at WWT Caerlaverock on Saturday 6 September 2014. Further details can be found on WWT's Waterbird Monitoring website (<http://monitoring.wwt.org.uk/2014/07/uk-waterbirds/goose-and-swan-monitoring-programme/gsmc-counters-conference/>). This informal gathering will allow an exchange of ideas on how goose and swan monitoring is shaped in the future – we look forward to seeing some of you there.

Carl Mitchell

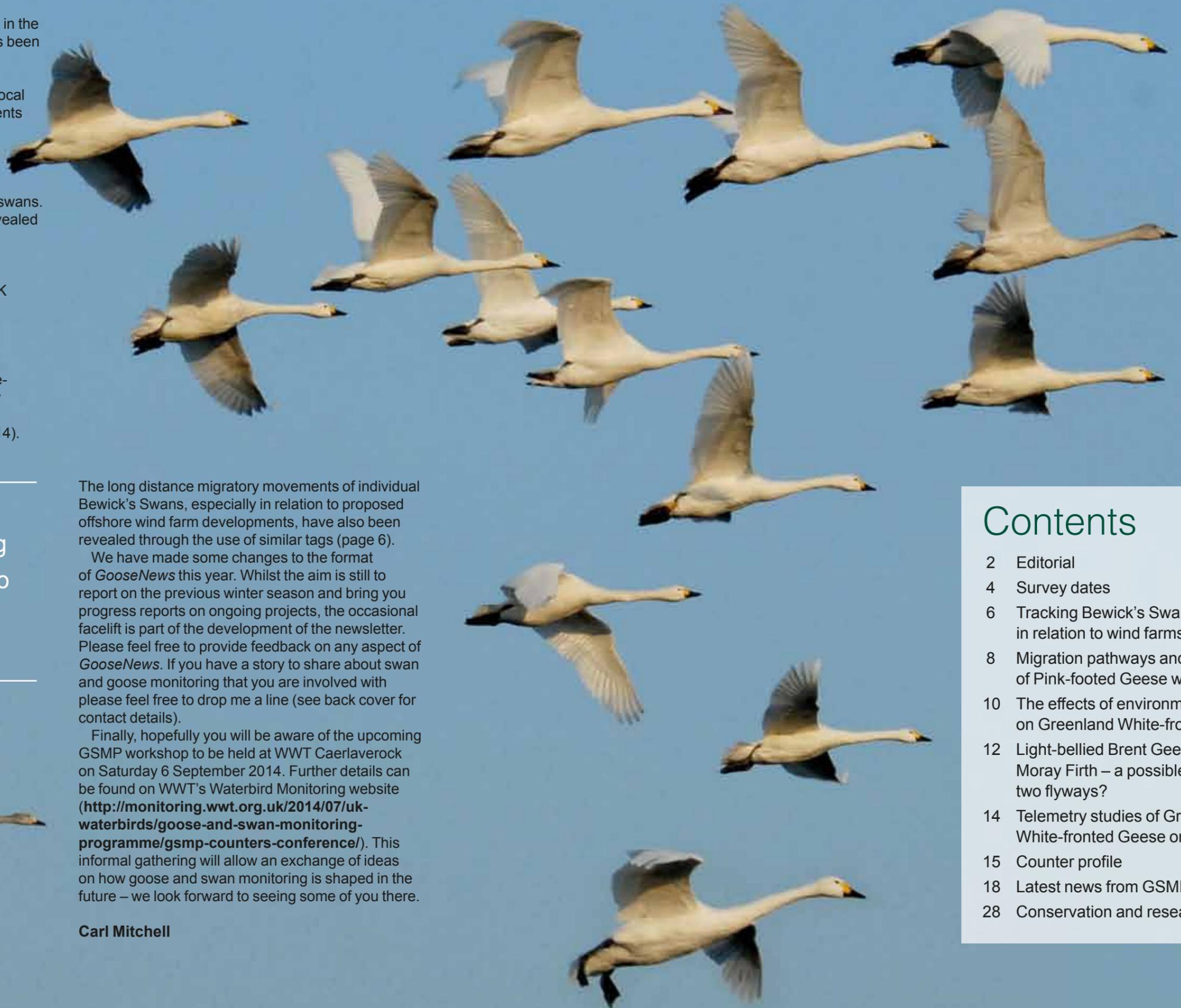


Photo: James Lees

Contents

- 2 Editorial
- 4 Survey dates
- 6 Tracking Bewick's Swan migration in relation to wind farms
- 8 Migration pathways and movements of Pink-footed Geese within the UK
- 10 The effects of environmental change on Greenland White-fronted Geese
- 12 Light-bellied Brent Geese on the Moray Firth – a possible link between two flyways?
- 14 Telemetry studies of Greenland White-fronted Geese on Islay
- 15 Counter profile
- 18 Latest news from GSMP surveys
- 28 Conservation and research news

Survey dates for 2014/15

Icelandic-breeding Goose Census

After consultation, the following dates were chosen for coordinated counts in 2014/15:

Pink-footed Goose: 18/19 October and 15/16 November 2014, and 28 February/1 March 2015

Iceland Greylag Goose: 15/16 November 2014 and 28 February/1 March 2015

These dates include a change to the schedule; there is no longer a requirement to undertake a count in December and there will be an additional spring count following the 3-yearly cycle reinstated in 2011/12.

Please remember that, ideally, all sites supporting Pink-footed Geese should be counted during October and November, whilst those holding only Iceland Greylag Geese should be counted in November. Please count both species during the spring survey.

If you are unable to count on the above dates, please contact either your Local Organiser or Carl Mitchell (see back cover for contact details), 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 that month, although any counts made during the month will be of value.



Photo: Colin Butters

International Swan Census

January 2015 sees the next International Swan Census (ISC) take place across Europe. The census, coordinated by the Wetlands International / IUCN SSC Swan Specialist Group, is carried out every five years and aims to estimate the size and distribution of all populations of Whooper Swan and Bewick's Swan.

The date of the next census is 17/18 January 2015

Since the first census in 1986, the Iceland Whooper Swan population has increased by 75%, with the previous census in 2010 recording an estimated population size of 29,232, compared with 16,742 in 1986. Although the majority of birds are usually recorded in Ireland, an increasing proportion of the population has been wintering in Britain; particularly in England, which in 1986 held just 10% of the population compared with 32% in 2010. The winter of 2009/10 was, however, one of the coldest and snowiest for many years and will have likely affected the swans' distribution, pushing them further south away from their usual wintering haunts in Scotland.

In contrast to the Whooper Swan, the Bewick's Swan population has seen a large decline from 29,277 in 1995 to c. 18,000 by 2010 (Jan Beekman pers. comm.). National trends in the UK mirror this decrease, with the Wetland Bird Survey (WeBS) trend indicating a decline of 41% between 1984/85 and 2010/11. Ireland has seen a particularly large drop in numbers, with the census in 2010 recording just 80 birds compared with 1,244 in 1984.

The ISC in Britain, Ireland and Iceland is coordinated by WWT, with generous help from WeBS, I-WeBS, the Irish Swan Study Group and our Icelandic colleagues.

Though these existing national count schemes cover a large proportion of sites, we also need to undertake counts of roosting birds at dawn or dusk in order to obtain better estimates of numbers at some key sites and survey areas not regularly covered by these schemes, such as feeding sites in agricultural areas. The ISC also involves collecting additional information on breeding success and habitat use of the swans.

The census in Britain and Ireland is due to take place on the weekend of 17/18 January, corresponding with the WeBS count dates and the International Waterbird Census. If you would like to get involved in the census, please contact Colette Hall (see back cover for contact details). Further information about the census will be made available on our website in due course – <http://monitoring.wwt.org.uk/get-involved/>.



Photo: Ed Burrell

Greenland White-fronted Goose Census

The counts for the coming season will be:

**13–17 December 2014 (autumn international census)
14–18 March 2015 (spring international census)**

Other preferential dates:

**15–19 November 2014; 10–14 January 2015;
14–18 February 2015; 28 February–4 March 2015,**

However, all your counts whenever, wherever are always very welcome!

The census is organised by the Greenland White-fronted Goose Study (<http://greenlandwhitefront.org/>). Please contact the organiser Tony Fox (see back cover for contact details) for further details about the census.

Reporting sightings of colour-marked birds

To report a sighting of a colour-marked bird, please first refer to the European Colour-ring Birding website (<http://www.cr-birding.org/>) where a list of project coordinators can be found, including for all WWT projects. Observations of marked birds can be submitted directly to the relevant project coordinator or in some cases by submitting sightings into online databases.

If you are unable to find a project that matches the bird you observed, please submit your details to the EURING Web Recovery Form (<http://blx1.bto.org/euring/main/index.jsp>).

If you would like to report a sighting of a colour-marked bird that has been ringed as part of a WWT project, please email your sighting to colourmarkedwildfowl@wwt.org.uk.

Further information about submitting a sighting of a colour-marked bird can be found on the WWT monitoring website at <http://monitoring.wwt.org.uk/our-work/uk-waterbirds/goose-swan-monitoring-programme/colour-marking>.

Age assessments

Age assessments will continue during 2014/15 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
Barnacle Goose		
(both populations)	Oct – Dec	
Dark-bellied Brent Goose	Sep – Mar	focus on Oct – Nov
Light-bellied Brent Goose		
(both populations)	Sep – Mar	focus on Oct – Nov

GSMP website

Much more information on the GSMP can be found on WWT's Waterbird Monitoring website at <http://monitoring.wwt.org.uk/our-work/>, including detailed survey results and all editions of *GooseNews*.

Details about all the GSMP surveys, including how to get involved, can be found on the website at <http://monitoring.wwt.org.uk/get-involved/>.



Photo: James Lees

Tracking Bewick's Swan migration in relation to wind farms

Eileen Rees, Larry Griffin & Baz Hughes

In January and February 2014, WWT, along with cannon-netters Robin Ward and Brian Bailey (also WWT's Richard Hearn and Richard Hesketh) and a dedicated team of volunteer ringers and swan handlers, caught a total of 18 Bewick's Swans (including five cygnets) and four Whooper Swans in three cannon-net catches at fields near the Ouse Washes and the Nene Washes in southeast England.

Wim Tijssen and Otto de Vries, over from The Netherlands for their annual swan ring-reading visit to the UK, arrived just too late for the first catch at Southery Fen, but were instrumental in locating a large flock of swans on a harvested sugar beet field at West Fen that became the site for the second and third catches.

Eight of the Bewick's Swans were fitted with collar-mounted radio-GPS-GSM data loggers which would provide hourly location data via the mobile phone network, and the remaining swans were marked with standard leg rings only. This tracking of Bewick's Swan movements formed part of an ongoing study undertaken by WWT for the Department of Energy and Climate Change (DECC) on the swans' migration in relation to offshore wind farm sites between their wintering grounds in the UK

and their breeding areas in the Russian arctic. The study particularly aimed to describe the swans' movements between the UK and continental Europe, for informing the proposed development of the Round 3 wind farm sites between southeast England and The Netherlands.

The swans tracked in spring 2014 migrated by both day and night, with most birds leaving on south-westerly tail winds on 9/10 February and 21/22 February 2014. Data loggers for five of the swans provided information on their route crossing the North Sea, and extrapolated tracks suggested that four of these birds crossed the proposed offshore East Anglia wind farm footprint (Figure 1). The precise tracks recorded for one bird probably passed over not only the East Anglia wind farm zone but also two consented offshore wind farms in Dutch waters.



Figure 1. Bewick's Swan tracks in relation to offshore wind farm sites (white = proposed; orange = consented; red = operational).

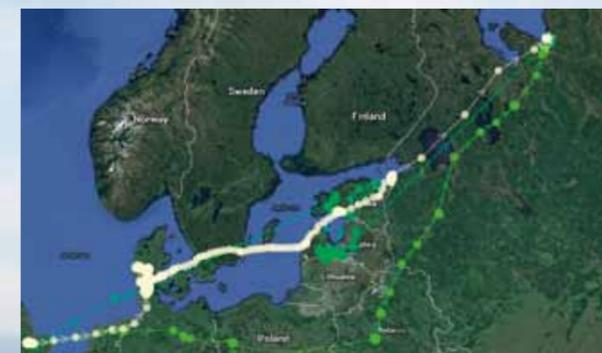


Figure 2. Tracks for three Bewick's Swans followed to the Russian arctic. The denser dots (GPS fixes) for BEWI11 (white dots) on crossing the Baltic Sea reflect an increase in recording GPS locations (from hourly to half-hourly) at this time. There is a gap in data for BEWI08 (turquoise dots) between leaving the Latvia/Lithuania border and arrival on the White Sea coast.

Additionally, another bird appeared to cross the footprints of one operational and four consented wind farms in the German North Sea, plus a further five at the application stage.

On leaving the UK, six of the tracked swans spent 18–41 days feeding on agricultural land (particularly maize stubbles) in Denmark in the first half of March. A seventh bird took a different migration route through Poland and Belarus to the White Sea region, which was also used as a staging area by two other Bewick's Swans successfully tracked this far north (Figure 2). Detailed information on the location of turbines within onshore wind farms in Denmark, kindly provided by Ib Petersen of Aarhus University, illustrated the likelihood of Bewick's Swans interacting with the network of onshore turbines when staging there.

The six swans tracked to Denmark migrated to the Baltic states in mid–late March, with all birds feeding on coastal waters in Estonia by 4 April, reflecting an exceptionally early passage of swans through that country (Leho Luigujõe pers. comm.). Two of the tags ceased functioning in Estonia, two swans were tracked to southern Russia (to the Finnish Bay near St Petersburg and the Pskov region, respectively) and three more were tracked to the Russian arctic, reaching the White Sea in late April to early May (about 2–3 weeks ahead of schedule) where their tracks indicated their movements in Dvina Bay.

The last location was on 19 May, when this swan probably moved out of range of the mobile phone/GSM network. However, we hope to obtain an update of information on where they spent the summer months when they return in the autumn and the loggers again make contact with the mobile network. WWT also hopes to continue this study next winter and to obtain further information on the Bewick's Swans' movements in spring 2015.



Catching swans at Southery Fen, Norfolk in January 2014.

Photo: Sacha Dench

Migration pathways and movements of Pink-footed Geese within the UK

Carl Mitchell & Arnór Þórir Sigfússon

The Icelandic-breeding Goose Census (IGC) and the Wetland Bird Survey (WeBS) provide the main information on the distribution of Pink-footed Geese in the UK. But what of the movements of individual geese between wintering sites?

Ringed geese and, in particular, the use of individual colour-marks has enhanced our understanding of where geese are at particular times of the year – but this information is dependent on sightings, and those can be influenced by the distribution and activity of ring-readers. Plus counts and ringing shed little light on the migratory movements across the north Atlantic. Recent developments in micro-electronics has enabled the use of Global Positioning System (GPS) tags to be used on a range of birds, and July 2013 saw the deployment of GPS tags mounted on lightweight plastic neck collars on two adult Pink-footed Geese caught during the annual moult near the Hálsión Reservoir in east central Iceland.

Both geese left east central Iceland in mid-September 2013 following a heavy snowstorm in the highlands and fed for a week at a farm in Hornafjörður

on the south coast. The geese then flew southeast over the north Atlantic, arriving in Perthshire, Scotland at the end of the month. One of the tagged geese encountered strong head winds on migration and rested for more than 30 hours on the sea, over 500 km southwest of the Faroes, before arriving in Scotland after three days on migration. This bird spent October in southern Scotland before heading further south to winter in Norfolk. On 20 February, it flew north and settled in Orkney. At 7.30pm on 14 April, it started its spring migration, heading northwest out to sea. It arrived on the east coast of Iceland at 1pm the following afternoon, a journey time of about 17 hours. The distance flown was around 845 km and, excluding a rest at about 3am near the Faroe Islands, the Pink-footed Goose averaged a flight speed of 58 km per hour. It reached land on the east coast of Iceland but appeared to realise it was too far north and flew

180 km southwards again without stopping until it reached Hornafjörður. To our great surprise, this bird then headed along the south coast to the southern lowlands to feed for nearly a month before heading east, to the north of the great Vatnajökull icecap, and on to the breeding quarters near the Hálsión Reservoir in early May (Figure 3).

The other tagged goose spent the winter in central southern Scotland, before heading to Caithness in February. It departed on 6 April heading northwest and arrived in Iceland very close to the farm it had left the previous autumn. From there, again to our surprise, it also moved to the southern lowlands to feed for nearly a month, before finally heading northeast, again north of the icecap to settle on the breeding grounds.

We have gained a remarkable insight into the daily movements of the two tagged Pink-footed Geese as they flew between their night-time roosts and feeding fields in the UK. This is invaluable from a countryside planning perspective. We also learned much about where the geese were feeding in relation to roosts that are afforded special protection for these geese (Figure 4). Such feeding areas are relatively poorly known and generally not protected so information on the key areas used is important for our ability to better protect and manage ecologically cohesive site networks. It is hoped to build on this pilot work by deploying more tags in the future.



Figure 3. The movements of one of the tagged Pink-footed Geese, marked in Iceland in July 2013. The autumn migration across the Atlantic Ocean took the more southerly route.

...the Pink-footed Goose averaged a flight speed of 58 km per hour.

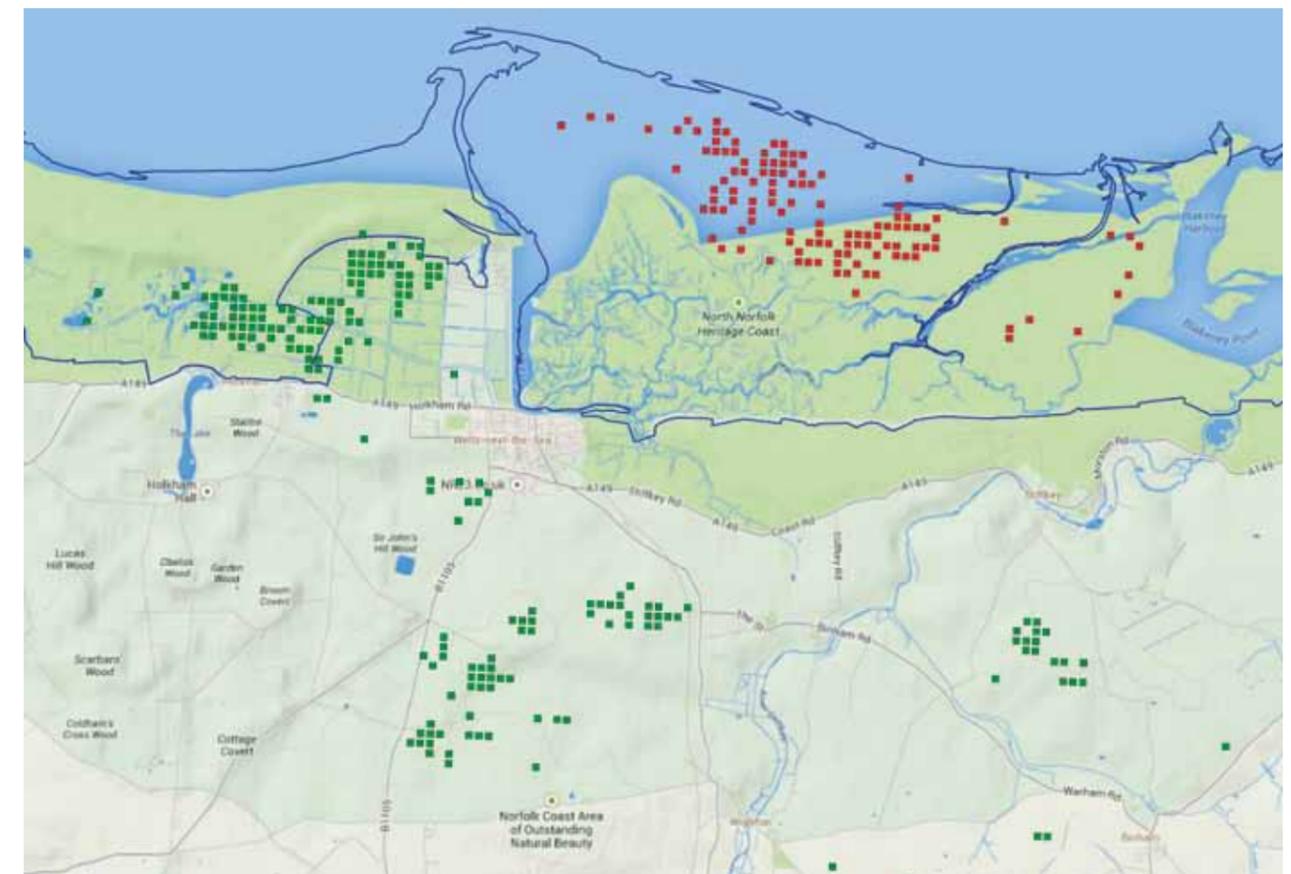


Figure 4. The feeding distribution (green symbols) and roost location (red symbols) of a Pink-footed Goose marked with a GPS device in relation to the SPA roost at Holkham Sands, Norfolk (blue line) during winter 2013/14.



Photo: Graham Catley



Photo: Alyn Walsh

The effects of environmental change on Greenland White-fronted Geese

Tony Fox, Mitch Weegman & Alyn Walsh

It cannot be easy being a Greenland White-fronted Goose these days! As you will know and have read elsewhere, this little population of the circumpolar Greater White-fronted Goose has suffered a run of relatively poor breeding years since the mid-1990s and the population has produced fewer young birds each year than are lost by annual mortality. Following a period of expansion after the cessation of hunting in Britain and Ireland, effective from winter 1982/83, the population increased steadily until the cumulative effects of this reduced production of young finally had an effect, manifest in a tipping point in 1999, after which the population has declined. Since then, the rate of the

decline was slowed by the closing of the hunting season in Iceland in 2006, which in years since has removed the effect of shooting some 3,000–4,000 birds annually. However, the population is not out of trouble yet. As we have seen, increased snow and lower than average spring temperatures when geese arrive on the breeding grounds seems to correlate with poor reproductive success, confirmed by the unusually good production of young again in summer 2010 when the spring was mild, warm and snow free and the summer also fine. So it seems changes in spring weather may have contributed to the reduced reproductive success in recent years.

However, this population is unusual, because unlike the European White-fronted Goose that migrates in relatively short hops of a few hundred kilometres each time as they return to Russian arctic breeding grounds via a series of staging and refuelling areas across continental Eurasia, Greenland White-fronted Geese are forced to make two longer leaps. The first is of 900–1,200 km from the wintering grounds in Britain and Ireland to staging grounds in Iceland where they stage for 3–5 weeks in spring, before continuing a similar distance over the sea and Greenland ice cap to their breeding grounds in west Greenland. Since there is no correlation between temperature and snow cover in Iceland when they leave the winter quarters, or in Greenland when they leave Iceland, Greenland White-fronted Geese cannot predict what conditions they will face at the next stage of each leg of their journey. Although climate change is having some effect on the weather in all these areas used by the geese at different times of their annual cycle, warming is tending to be most rapid in more northerly latitudes. We might therefore expect that these geese may face a mismatch in their food supply because we would predict that conditions are warming more rapidly on the breeding areas than on the winter quarters.

In fact, this does not seem to currently be the case, because as we explain elsewhere in this edition of *GooseNews* (see page 23), conditions in west Greenland have steadily worsened, as warmer sea temperatures have increasingly deflected frontal weather systems towards the west coast in spring, lowering temperatures and depositing considerable amounts of snow in some years compared to longer term seasonal averages.

To our surprise, Greenland White-fronted Geese have shown remarkable flexibility in their responses to these environmental changes. During 1969 to 2012, the geese advanced their overall departure date from Irish winter quarters by one month, apparently because they attained necessary threshold fat stores earlier. Milder winters and improved agricultural grassland management have ensured that the geese construct the required fat stores earlier each spring, as measured by field scores of their abdominal profiles that enable us to assess their fat stores without having to catch them. This earlier accumulation of fuel enables them to migrate to their breeding areas earlier in spring. In very recent years, they have also left the wintering grounds in a fatter condition as well, so not only do they leave earlier but they do so with greater stores of body fat when they depart.

This all sounds like good news for the geese because arriving earlier and in better condition in Iceland should enable better preparation for the onward migration to Greenland. This is certainly the case, except that temperatures in Iceland in April (as predicted under most climate models) have not changed dramatically in recent years, so geese arriving earlier in Iceland now experience colder conditions than in previous years.

But these geese are not stupid! They have also shown extraordinary flexibility in their diet, and they have progressively shifted from consuming underground plant storage organs in wetlands (which were their

traditional source of spring food) to grazing managed hayfields. The hayfields are sown with specially bred strains of grass that provide early green fresh growth despite sub-zero temperatures. Thus, even when traditional foods are inaccessible in frozen substrates, we know from daily changes in goose abdominal profiles that they can accumulate fat from grazing hayfields despite seemingly harsh conditions, especially soon after arrival.

In 2012 and 2013, our studies showed that geese arrived in Iceland three weeks earlier and in a fatter condition, but that they accumulated fat at significantly slower rates than during parallel studies in 1997–1999 and 2007. Most surprisingly, although geese arrived earlier and accumulated sufficient fat stores earlier in Iceland in 2007, 2012 and 2013, they still departed from Iceland around the same dates as in 1997–1999. In other words, these birds arrived earlier, fattened at a more leisurely rate and prolonged their spring staging by an extra three weeks before departing for Greenland! This pattern was rather unexpected, because whilst this population has simultaneously shown an advance of one month in departure rates from Ireland and Britain, they have shown almost no change in departure dates from Iceland and therefore arrival dates on the breeding areas. Indeed, looking at the historical archive, arrival dates in west Greenland have not changed from those reported in the 1880s!

We interpret this to mean that plasticity in winter departure dates is likely due to improved winter feeding conditions, whereby intensively managed agricultural grasses enable geese to attain better condition earlier, enabling earlier departure. In addition, agricultural changes in Iceland offer a novel but predictable food resource there. While these improvements in available forage have enabled Greenland White-fronted Geese to attain threshold fat stores in Iceland earlier than in previous years, these birds have not departed earlier for Greenland. Presumably this is a response to recent cool springs and heavy snowfall in west Greenland which mitigates against earlier arrival to the breeding areas because low temperatures and frozen substrates and/or deep snow inhibit the recovery of fat stores by pre-laying females in readiness for laying and incubating a clutch of eggs.

You can read more about these patterns in the following publications which are freely accessible on the internet:

- Boyd, H. & A.D. Fox. 2008. Effects of climate change on the breeding success of White-fronted Geese *Anser albifrons flavirostris* in West Greenland. *Wildfowl* 58: 55–70. Accessible at: <http://wildfowl.wwt.org.uk/index.php/wildfowl/article/view/1205/1205>.
- Fox, A.D., M. Weegman, S. Bearhop, G. Hilton, L. Griffin, D.A. Stroud & A.J. Walsh. 2014. Climate change and contrasting plasticity in timing of passage in a two-step migration episode of an arctic-nesting avian herbivore. *Current Zoology* 60: 233–242. Accessible at: <http://www.currentzoology.org/temp/%7BAE691B21-3C7D-469B-B9B7-5EC35F91D60E%7D.pdf>.

Light-bellied Brent Geese on the Moray Firth

– a possible link between two flyways?

Simon Foster, Carl Mitchell & Preben Clausen

A hundred years ago, on the Moray Firth in north Scotland, Brent Geese were known as Covesea Geese (pronounced 'Cowsie') after the town. They were particularly plentiful in Nigg Bay, notably so from the 1890s, but they were heavily shot and numbers began to decline. There were still around 4,000 birds there in the 1930s but the area was abandoned in the 1940s. Their provenance was probably confirmed by two birds ringed in Svalbard; one ringed in 1933 was recovered on the Moray Firth in 1934 and another ringed in 1975 was recovered in Nigg Bay the following winter.

Since the 1970s, there have been regular sightings of Light-bellied Brent Geese on the south Moray Firth coast around Nairn and Lossiemouth, mainly involving birds on passage. Small numbers began to overwinter, particularly around Nairn, from the mid-1980s and, with some regularity, from the mid-1990s. In 2011, an international colour-ringing program on the population was revived in Denmark, so our attention was once again drawn to the Moray Firth birds. By now we had a regular flock of around 60 to 70 birds, but we could only guess at their origin.

Watching Brent Geese eating *Enteromorpha* off rocks on the beach at Nairn is one thing. Catching them is another – our experience of catching had been spoilt by heading out to Ireland and having been shown how simple it was to catch these birds. So we thought "...easy, we'll have this sorted and be home in time for dinner." We watched, we waited, we set the nets, we

watched, we waited, we set the nets again and we even rolled up our trousers and paddled out to sea. In total, we spent around 60 hours watching the geese. Finally, after careful study, a net was set at a freshwater outflow. Despite their maritime nature, Brent Geese do like to drink and have a wash in freshwater. We stood a chance. The flock of 60 birds were one side of the outflow; then the other. After a little gentle encouragement ('twinkling'), several birds entered the catching area. A catch of ten Brent Geese on 13 January 2012 were the first to be marked on the Moray Firth.

We assumed that the birds belonged to the Svalbard/NE Greenland breeding population, and, so far, this has largely proved to be the case. All ten marked birds have been sighted after capture, and have yielded 69 sightings from within the Moray Firth, but also from further afield with one seen on the Ythan Estuary, two at Lindisfarne, Northumberland and two from the Limfjord area in Denmark, where the entire East Atlantic (EA) flyway population gathers during the spring before they embark on a non-stop flight to their Arctic breeding areas in late May.

The marked Brent Goose seen on the Ythan Estuary was also one of the birds seen in Denmark, where it was seen at two different sites. The other goose seen in Denmark had also been seen at Lindisfarne. These observations add to an already existing and quite strong indication of the link between northeast Scotland birds, Lindisfarne and Denmark, since another nine birds

“Once again, despite the small size of the catch, colour-ring sightings have proved invaluable...”

ringed previously in Lindisfarne or Denmark had been reported along the east coast of Scotland from the Moray Firth to the Ythan Estuary (Mitchell & Ogilvie 2007).

Notably, however, one of the Nairn birds has been reported from Ireland, where it was observed at Tralee Bay on 28 April 2013 and Strangford Lough on 9 January 2014. This individual appears to have swapped to the East Canadian High Arctic (ECHA) flyway of Light-bellied Brent Goose. This is not the first time birds have moved between the flyways (see Clausen 2007) – nor the first link between the East Canadian breeding and the Moray Firth wintering birds, because another ECHA ringed bird was observed at Lossiemouth on 25 December 2002 (Mitchell & Ogilvie 2007). There is growing evidence that the small flock of Light-bellied Brent Geese around the Moray Firth may indeed be an interchange site between the two flyways.

Once again, despite the small size of the catch, colour-ring sightings have proved invaluable in making the connection between wintering sites, and we are thankful to all observers spending time reading rings and reporting these to us. Colour-ring sightings of Light-bellied Brent Geese can be forwarded to either Preben Clausen (pc@dmu.dk; sightings from the east coast of Scotland and from England) or to Graham

One of the colour-ringed Brent Geese from a catch of ten birds in January 2012 (yellow X; yellow above green).

McElwaine (grahammcelwaine@btinternet.com; sightings from the west and north coast of Scotland, Wales, southern England and Ireland).

References

- Clausen, P. 2007. Light-bellied Brent Geese crossing 'borders' – but how many? *GooseNews* 6: 8–9.
- Mitchell, C. & M. Ogilvie. 2007. Brent Goose. Pp. 168-172 in Forrester, R., I.J. Andrews *et al.* (Eds). *The Birds of Scotland*. The Scottish Ornithologists' Club, Aberlady.



Photo: Derek McGinn

Photo: Richard Taylor-Jones

Telemetry studies of Greenland White-fronted Geese on Islay

Ed Burrell, Geoff Hilton, Larry Griffin & Carl Mitchell

Autumn 2013 saw the start of a new two winter initiative on the Isle of Islay (Argyll) to investigate the within-island movements and habitat use of Greenland White-fronted Geese.

In implementing a research programme funded by Scottish Natural Heritage (SNH), WWT caught 13 Greenland White-fronted Geese, 12 of which were fitted with telemetry devices. Despite Islay being the main wintering area for Greenland White-fronted Geese in the UK, very few birds have been caught there over the years, so it was good to make some catches, however small, to increase the marked population. Location data from the GPS devices were later downloaded revealing in detail the daily movements of the geese (Figure 5). In total, nearly 6,000 locations were collected during the winter.

The telemetry study was part of a larger research programme. A total of 581 sightings of 59 neck-collared birds were made, the majority of which had been caught on Islay (40), but others came from further afield; five from Loch Ken (Dumfries), 12 from Wexford (Ireland) and two from Greenland. For all avid ring-readers, Islay is now a special place to visit to record marked individuals. In addition, 2,239 Greenland White-fronted Geese were aged, revealing 17.7% young, and the abdominal profile index (an indication of body condition) was recorded on over 15,000 occasions. The latter will be compared to profiles determined in Wexford,



Photo: Ed Burrell

the main wintering site in Ireland, to see if the geese fare better in one location or the other.

Night-time roosts were checked for use by Greenland White-fronted Geese and flight lines to and from the roosts were plotted. This involved many long hours hunkered down on the edge of a moor waiting patiently for the geese to arrive – but when they did, the call of the geese and the whiffling of wings as they lost height was a very special wildlife experience. These data were then compared with the results from a similar study carried out by WWT in 1994/95 to determine any changes in roost use. The telemetry data proved invaluable here too in allowing us to assess exactly where individual geese roosted on a seemingly uniform moorland habitat, littered with small pools.

Basic habitat types were recorded for all enclosed fields on Islay (>1,550 fields) and this information will be used when assessing field use by the geese. This information will be combined with detailed within-field habitat selection based on the telemetry data. The goal is to produce a model of feeding habitat selection by the geese.

In addition, observations were made on the response of Greenland White-fronted Geese to the lethal and non-lethal scaring of Greenland Barnacle Geese carried out on Islay as part of the Islay Local Goose Management Scheme. The behavioural information gathered will also inform a distribution model and this will be examined specifically to see if there is evidence for localised under-use of otherwise suitable habitats in response to the scaring. Further updates on this project will be provided in future editions of *GooseNews*.



Figure 5. Winter location data for one of the Greenland White-fronted Geese marked at Gruinart, Islay in November 2013.

Counter profile



Allan Brown & Lyndesay Brown: Lothian & Fife Swan and Goose Study Group / GSMP Local Organiser for Lothians, Borders and Fife.

How did you get involved, how long have you been doing it, and what is your role?

Our interest in swans and geese arose through attending the Discussion Group of the Scottish Ornithologists' Club (SOC) in Edinburgh in the mid-1970s. There we met Willie Brotherston who had been organising goose counts for Pink-footed and Greylag Geese at Fala Flow and Gladhouse Reservoir since the late 1940s and was at the forefront of coordinating goose counts in Lothians and Borders as a precursor to the national counts subsequently developed by WWT in the 1960s. The passion that Willie, and other local birdwatchers such as R.W.J. (Bob) Smith, had for geese was instilled in us when accompanying him on several counts to Fala Flow – even to the point of guessing how many birds arrived in the dark! We were soon providing him with additional count and feeding data and developed a particular interest in monitoring the roost and feeding areas for Pink-footed Geese at West Water Reservoir, Borders. The untimely death of Willie in 1981 saw goose count coordination in Lothians and Borders fall to us to organise and we have done this for much of the period since then but with Peter Gordon taking on the role in the early 1990s when we moved to Fife and took on the coordinating role there as well.

Thus, we have had a coordinating role in Grey Goose counts in Lothians, Borders and Fife since 1981, added to which we have also undertaken our own study of feeding distribution and use of roost sites throughout the winter in an attempt to identify the key

areas and how they are used throughout and between winters. This has resulted in several reports being produced for Scottish Natural Heritage (SNH) on the status of geese in southeast Scotland as well as for specific roost sites such as Cameron Reservoir in Fife and Fala Flow, Gladhouse Reservoir and West Water Reservoir in Lothians/Borders.

Running parallel to our goose work is our long-term study of the Mute Swan. This arose out of concerns raised at the SOC Discussion Group in the mid-1970s regarding the apparent decline of this species as a breeding bird. An initial survey organised by Lance Vick in 1977 found only 19 pairs in the Lothians compared with 52 pairs in the national census held in 1961. As British Trust for Ornithology (BTO) Regional Representatives for the Lothians in 1978, we coordinated the BTO National Census of the species that year for the area, the findings replicating those found in 1977. As a consequence we decided to undertake an annual census to assess the population status and trends and this study was expanded in 1982 with a colour-ringing programme developed with the assistance of Chris Spray, who had stimulated our interest in ringing swans when we helped him ring birds in the Outer Hebrides in 1981. The study has continued ever since and was extended to Fife in 1991. The ringing concentrates on cygnets at their natal site as this provides the most useful information on individual birds and it is now one of the longest-running single species studies in the UK. We have subsequently organised the Scottish part of National Mute Swan

censuses in 1983, 1990 and 2002, the findings of which have been published in *Scottish Birds*.

Although the goose and swan studies are very much our own projects they both rely on the support of other observers to provide some of the data to help make the surveys as complete as possible. The swan study in particular relies on observers submitting colour-ring sightings to us for recording in a database. This has enabled several analyses to be undertaken on status and survival, with others in preparation.

Where do you cover for ring-reading yourself, and what do you record?

Recording goose rings has tended to be incidental to our monitoring of the location of feeding flocks and is obviously dependent upon birds being ringed elsewhere by others, either in Iceland or Scotland, so this has never been a significant part of our goose studies compared with counting actual flocks. However, reading ring numbers is a vital part of the swan study throughout Lothians and Fife. This provides valuable information on factors such as survival, life-time reproduction, return to natal area to breed, movements of adults and young etc. This requires frequent monitoring of swan flocks throughout the year to identify ring numbers as well as to confirm if breeding pairs are ringed. Observers such as Bill Renwick have been invaluable in helping to reduce our workload in this regard. At urban sites, such as those in Edinburgh, reading rings can be a relatively easy task as birds become quite tame and approachable (as well as easy to catch); however, in more rural locations, especially throughout Fife and East Lothian, trying to read ring numbers can be quite a challenge and requires patience and persistence to be successful. Waiting for a bird to up-end to show a colour-ring can be a long process but the most frustrating part is if a bird comes close enough to read the ring but then holds its colour-ringed leg on its back out of sight!

Have there been any particular changes in status or distribution in recent years?

Long-term monitoring has helped to identify key feeding and roosting areas for geese – some areas are used every year, if in varying numbers. However, geese can be opportunistic and adopt new roosts or feeding areas as opportunities arise in terms of feeding, safety and levels of disturbance, hence the need for ongoing monitoring. Within the study area there have been changes to the use of Pink-footed Goose roosts with long-established roosts such as Cameron Reservoir and Gladhouse Reservoir, which regularly held over 10,000 birds, being all but abandoned for reasons which remain unclear, but may lie with aspects of site management and/or cropping regimes in associated feeding areas. However, recent years have seen both Pink-footed and Greylag Geese make use of new roost sites in northeast Fife at various sand and gravel quarries located close to feeding areas, with 5,000 or more birds being recorded on occasion with this use extending throughout the winter. What is apparent is



the arrival of Pink-footed Geese at key locations in the early autumn with 20,000 or more being recorded regularly at sites such as Aberlady Bay and West Water Reservoir and over 10,000 at Fala Flow and Hule Moss, before the birds disperse elsewhere. Indeed, we usually organise a coordinated count in late September prior to the first national count to help identify the initial arrival areas for Pink-footed Geese; in recent years this has occasionally recorded more birds in the study area than were found on the national count dates. Perhaps the biggest change in status has occurred with Greylag Geese with almost all wintering birds in the Lothians now from the re-established population, numbering over 1,000 birds, with apparently few Icelandic birds now present. However, this is not the case in Fife where 2,000–3,000 presumed Icelandic birds can occur throughout the winter, numbers often increasing into spring, with the sand and gravel quarry areas being particularly favoured, whilst a former regular site at Kilconquhar Loch has been all but abandoned by this species.

Mute Swans have shown a remarkable increase from 20 territorial pairs to 100 pairs since the study commenced in the Lothians in 1978 with breeding now taking place throughout the area. A similar pattern of increase has occurred in Fife. This increase has, in part, been fuelled by mild winters, increased survival and an annual productivity figure of 2.5 cygnets fledged per breeding pair – more than enough to sustain the population. New breeding sites have also been created throughout the study area – either new farm ponds in rural areas or sustainable drainage system (SUDS) ponds in urban areas which swans have quickly adopted. This also makes monitoring more challenging as many such ponds are not always visible from roads. Recently the opening-up of the Union Canal to increased boat traffic has seen a major decline in breeding birds using that habitat which we are investigating at present.

Favourite moments since starting monitoring?

The biggest problem with undertaking a goose roost count is being able to enjoy the spectacle for what it is when you are concentrating on trying to count the birds! Any goose roost, especially involving thousands of birds, is an uplifting experience (and sometimes challenging if the weather is not ideal) and the uncertainty is not knowing what you are going to get. At dawn the murmuring of the birds, which can sound like a low hum over the water, gradually gets louder as dawn breaks and then they can all lift off in a deafening noise. We prefer dusk counts which have provided us with some of our most memorable moments and in particular at West Water Reservoir where our intensive monitoring during the 1970s and 1980s and subsequent counts since then helped to confirm the status of this site as one of the key Pink-footed Goose roosts sites in the UK. At dusk you generally have an initial slow arrival of birds which then builds up as those feeding further away from the roost arrive and then they all 'wiffle' down into the roost, sometimes almost flipping right over as they lose height calling all the time. It is a spectacle which always amazes and when it involves up to 60,000 birds it is mesmerising – but even the regular 20,000–40,000 is well worth the wait! Dusk, of course, means it is getting dark so counting then can be a challenge – but we did say that Willie Brotherston taught us how to count in the dark! With Mute Swans, one of the best moments involves watching the success of long-established pairs. One pair was together for 20 years and fledged 125 young, all of which were ringed and some of which also subsequently bred. Reading ring numbers is probably the most interesting part of the study as one never knows what you might find, especially in the flocks. It is a great thrill to come across a ringed bird which has 'gone missing' for many years – and helps to reinforce the need for observers outwith the study area to also check their swans for rings. Swans do not stay in your study area and its political boundary! Overall, it is the recovery of the swan population to its highest ever levels which gives us the greatest satisfaction and shows how worthwhile and rewarding the monitoring has been.

What do you enjoy, or what motivates you most about your role?

Regular monitoring of geese helps to identify where, when and how many birds occur and how this changes from one winter to the next. This provides an important basis for conservation policy, site designations and management and can help to identify potential areas of conflict with other land users and development proposals. This is probably the key motivation to our study to ensure that accurate data are available. To this end we encourage observers to submit data additional to that required for the national counts and to provide habitat and activity information, together with a 6-figure grid reference (which is essential for accurate mapping and to assess the impacts of any development near feeding areas), all of which contributes to helping to fully understand how geese use an area. It can be a struggle

requesting observers to visit a roost site for a regular 'nil return' and finding new counters to take on additional sites or undertake more regular monitoring but ultimately any data which can be gathered helps to provide a fuller picture of how geese use the study area which, we believe, is the best means of securing the conservation and long-term future of both the species and the sites which they use.

A similar scenario applies to Mute Swans – it is just as important to know which sites the birds are not using as well as how territorial, breeding and flock sites change. The added bonus with studying Mute Swans is, without sounding too anthropomorphic, that you really do get to know the characters of individual birds which are the subject of your study; catching and ringing them means treating them with respect – there is nothing better than catching and ringing a swan brood whilst the parent birds walk around you keeping an eye on proceedings without showing any signs of distress. Much of our ringing is undertaken in public places and this invariably involves considerable interest in what we are doing, children in particular being delighted to get up close to a swan; hopefully this 'educational' role rubs off on a few people and sparks their interest in birds and wildlife in general and as the goose and swan counters of the future. The biggest challenge for us is to keep up the momentum for both studies, and thus gathering more data, whilst trying to analyse all of the data which we have collected. Retirement from work has not made this task any easier!

Many thanks for all your help

The greatest strength of the Goose & Swan Monitoring Programme lies in the tremendous volunteer input from you, the counters, ring-readers and other participants. We hope that you will continue to support the GSMP and, through it, the conservation of swans, geese and wetlands throughout the UK and beyond. *GooseNews* is the newsletter of the GSMP. It is sent to participants each autumn and is available either as a printed copy or a pdf file that can be downloaded from the WWT Waterbird Monitoring website at <http://monitoring.wwt.org.uk/our-work/goose-swan-monitoring-programme/reports-newsletter/>. If you would prefer to receive *GooseNews* in an alternative format, please contact WWT's Species Monitoring Unit at monitoring@wwt.org.uk. We're always looking for new stories to tell, as well as photographs and relevant news items to fill future editions of *GooseNews*. Therefore, if you have any ideas or if you would like to contribute to the newsletter, please contact Carl Mitchell (see back cover for contact details).

Latest news from GSMP surveys

Winter 2013/14 saw some highs and lows, and reflected the changing fortunes of geese and swans in the UK. Bewick's Swan numbers were the lowest for many years, yet record numbers of Pink-footed Geese and Svalbard Barnacle Geese were recorded. Iceland Greylag Geese saw a second year of declining numbers, as did Taiga Bean Geese in Norfolk, whilst numbers of Greenland White-fronted Geese show signs of stabilising. The breeding success of the Brent Goose populations varied, with Dark-bellied Brent Geese having a reasonable season, whilst both Light-bellied Brent Goose populations had near breeding failures.

Thanks to the huge efforts of those contributing to the GSMP programme, the most recent results, including new population count totals and annual breeding success values, where available, are given below. These are followed by shorter updates on each species/population.

More detailed results are available on WWT's monitoring website at <http://monitoring.wwt.org.uk/our-work/uk-waterbirds/goose-swan-monitoring-programme/species-accounts/>.

Total counts and breeding success of goose and swan populations recorded during various surveys in 2013/14 (except for Greenland White-fronted Goose which are for 2012/13). Surveys were undertaken at an international or national scale, or at a few key sites; see individual population reports for further details.

Population	Total count ¹	Percentage young	Mean brood size
Northwest European Bewick's Swan	-	14.7	2.05
Iceland Whooper Swan	-	14.3	1.93
Taiga Bean Goose	286 ²	34.5	2.43
Greenland/Iceland Pink-footed Goose	372,074 ³	17.1	2.16
European White-fronted Goose	-	28.3	2.17
Greenland White-fronted Goose	22,156 ⁴	11.1 (Islay) 4.9 (Wexford)	3.01 (Islay) 2.63 (Wexford)
Iceland Greylag Goose	88,577 ³	22.2	2.23
British Greylag Goose	-	18.1 (Orkney) 35.3 (Tiree)	2.23 (Orkney) 2.64 (Tiree)
Greenland Barnacle Goose	-	5.5 (Islay)	1.78 (Islay)
Svalbard Barnacle Goose	38,100 ⁵	7.0	1.98
Dark-bellied Brent Goose	-	15.4	2.49
Canadian Light-bellied Brent	34,734 ⁶	0.04	1.20
East Atlantic Light-bellied Brent Goose	6,900 ⁷	4.2	-

1 The official UK population estimates (e.g. for calculation of national 1% thresholds) remain those of the Avian Population Estimates Panel (Musgrove, A.J., N.J. Aebischer, M.A. Eaton, R.D. Hearn, S.E. Newson, D.G. Noble, M. Parsons, K. Risely & D.A. Stroud. 2013. Population estimates of birds in Great Britain and the United Kingdom. *British Birds* 106: 64–100). The official flyway population estimates (e.g. for calculation of international 1% thresholds) are those published by Wetlands International at <http://wpe.wetlands.org>

2 Combined total from Slamannan Plateau and Yare Valley. From: Maciver, A. & T. Wilson. 2014. *Population and distribution of Bean Geese in the Slamannan area 2013/14*. Report to the Bean Goose Action Group and Ben Lewis (RSPB). In litt.

3 Flyway total. From: Mitchell, C. 2014. *Status and distribution of Icelandic-breeding geese: results of the 2013 international census*. Wildfowl & Wetlands Trust Report, Slimbridge.

4 Flyway total. From: Fox, A.D., I.S. Francis & A.J. Walsh. 2013. *Report of the 2012/13 international census of Greenland White-fronted Geese*. Greenland White-fronted Goose Study report.

5 Flyway total. WWT data.

6 Flyway total. All-Ireland Light-bellied Brent Goose Census data provided by the Irish Brent Goose Research Group.

7 Flyway total. Provided by Preben Clausen.



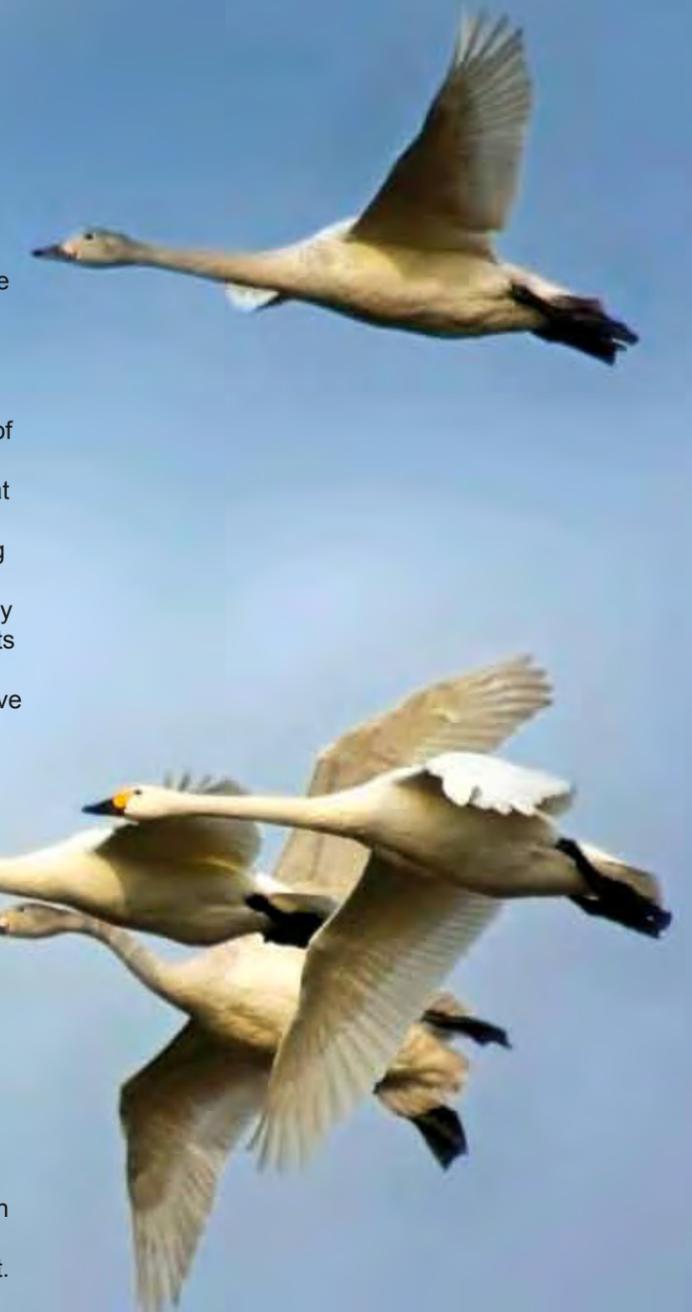
Photo: Nick Cottrell

A memorable winter for Bewick's Swans

Julia Newth

The 2013/14 winter turned out to be rather memorable for various reasons. Following the arrival of the first seven Bewick's Swans at Slimbridge on 27 October, we encountered some extraordinary weather in a winter marked by unusually mild temperatures and blustery south-westerly winds. Despite the odd spell of north-easterly winds that brought flurries of new arrivals to our shores, the swans were slow to arrive at wintering sites in The Netherlands and Britain. Many swans remained in countries further east, contributing to the lowest number recorded at Slimbridge since 1965/66. A total of 202 individuals, each recognised by its unique bill pattern or as a cygnet associating with its parents, visited the reserve over the course of the winter, compared to an average of 352 over the last five years. Numbers at WWT Welney and on the Ouse Washes in Norfolk never rose above 1,073 (recorded on 6 January). This area is the most important wintering site for the species and can usually expect to host up to 5,000 Bewick's Swans in mid-winter. The Netherlands encountered a similar scenario with around 5,000 birds recorded in mid-January, which is quite staggering given that this country usually hosts up to 13,000 Bewick's Swans each winter. Although there were slightly higher numbers than usual in Belgium (around 500 birds) and in Denmark (up to 2,000 were drawn to stubble fields) many birds were still missing. It transpired that at least 5,000 had made the most of German hospitality! Germany has been an important staging area for Bewick's Swans since the 1950s, with thousands stopping-over there on autumn and spring migrations, mainly in the Baltic region in the northeast. In recent years it has not been uncommon to see between 2,000–4,000 wintering there, but this year was quite exceptional. Some did not even make it to Germany, with 300 remaining in Poland. So, all in all, it was an unusual winter for the Bewick's Swan in Europe.

An international age assessment (coordinated by Dutch ornithologists Jan Beekman and Wim Tijssen) in December determined the age of over 12,000 Bewick's Swans across northern Europe (Latvia, Poland, Germany, Denmark, The Netherlands, Belgium and Britain). Overall, 12.8% young were found in the flocks surveyed, slightly lower than the proportion of young found in 2012 (14.5%) (W. Tijssen and J. Beekman pers. comm.). Birds wintering in Britain were found to have had a reasonably good breeding season in 2013 with 14.7% young recorded in wintering flocks. This was considerably higher than the average recorded at these sites over the previous ten years (10.5%). The mean brood size, from 96 families checked, was 2.05 young per successful pair.



‘...we encountered some extraordinary weather in a winter marked by unusually mild temperatures and blustery south-westerly winds.’

Photo: Dominic Heard



Whooper Swans with newly hatched cygnets in Iceland in early June 2014.

Photo: Ólafur Einarsson

Breeding success of Whooper Swans in 2013/14

Julia Newth

The Iceland Whooper Swans had a rather more typical season, arriving on British shores like clockwork from mid-September. Numbers reached 1,600 at WWT Martin Mere on 19 January and 13 February, and 258 were at WWT Caerlaverock on 21 March. But many more headed south, with a record 7,443 birds making the most of the Ouse Washes in southeast England recorded on 25 November, easily surpassing the average peak count at this important site over the last ten years (5,148 birds). The Ouse Washes is now the most important wintering site for Iceland Whooper Swan due to the attractive habitat mosaic of seasonally-flooded wet grassland and arable farmland where food is in plentiful supply. The swans return to the waterbodies to roost at night, primarily at the WWT reserve at Welney, but also at other smaller satellite sites.



In December and January, hundreds of swan enthusiasts from Britain and Ireland headed out to the fields to count the number of adults and cygnets in wintering flocks in order to assess the breeding success in 2013.

A staggering 13,152 birds were aged, representing just under 50% of the total population: 6,896 birds in England, 612 in Scotland, 1,874 in Northern Ireland and 3,770 in the Republic of Ireland. Overall, Iceland Whooper Swan experienced an average breeding season with 14.3% young recorded in flocks and a mean brood size of 1.93 cygnets for pairs with young. Icelandic colleagues reported that the spring and summer had been quite cold in Suður-Þingeyjarsýsla with low temperatures and heavy rain (S. Thorstensen pers. comm.) which would have almost certainly impacted on the breeding success of birds in that area. We are pleased to hear that the 2014 breeding season is already underway with newly hatched cygnets having been spotted by Oli Einarsson at the beginning of June, two months earlier than expected! Let's hope this bodes well for the rest of the population this year.

Photo: Ernest Duscher

The Icelandic-breeding Goose Census in 2013 – a record count of Pinkfeet

Carl Mitchell

Autumn 2013 saw Pink-footed Goose numbers at a record level, further indicating that the counts in 2011 (totalling 260,325) were under-estimates of the true population level at that time. A total of 372,074 geese was counted in mid-October through the coordinated IGC, the highest count on record and a 3.6% increase on the census-based estimate in 2012. Census coverage was, once again, excellent, and whilst in some years peak counts at key arrival sites in the UK can be as early as late September, because count coverage in Iceland remains impracticable, it seems sensible to continue to choose mid-October as the preferred census time. Breeding success was just below average at 17.1% young, with a mean brood size of 2.16 goslings per successful pair. Some notably large counts of Pink-footed Geese were once again noted in early autumn, with 46,796 birds at Montrose Basin on 8 October, 28,200 at West Water Reservoir on 12 October, 29,400 at WWT Martin Mere on 13 October and 23,270 at Loch Leven on 14 October. The long-term trend for Pink-footed Geese has been one of steady increase; in the early 1960s the population was estimated to be about 55,000 birds, yet by 2008 the number had reached 351,000 geese, a six-fold increase, and continues to hold at around this number.

The timing of the census of Iceland Greylag Geese is also important; in some years, the migration to the UK is staggered whereas in other years there can be a mass exodus. In autumn 2013 there appear to be an early departure, with only 21,266 birds being counted in Iceland at the time of the November census. The population estimate was 88,577, a decline of 15.3% on the 2012 figure. This is the second year in a row that the population estimate has decreased by more than 10%. Whilst the cause of this year on year decline is

unknown, the Greylag Goose remains a favoured quarry species in Iceland, and in the past five years the average number shot there has increased from c.35,000 per annum to c.47,000 per annum, including 59,432 shot in 2009. Furthermore, as more Greylag Geese are shot in Orkney to reduce the British Greylag Goose population there, it is highly likely that more Iceland migrants are being shot there too. Age counts were carried out in Orkney and Caithness and, from a sample of 2,588 birds aged, breeding success was estimated at slightly above average at 22.2% young, with a mean brood size of 2.23 goslings per successful pair. Orkney, once again, held the largest number of Iceland migrants with 63,665 counted in November (of which 16,600 were thought to be British Greylag Geese). However, Caithness also held 11,063 birds, which is higher than in recent years, whilst 21,266 geese remained in Iceland at the time of the count.

As previously mentioned in *GooseNews*, assessing the abundance of Iceland Greylag Geese is becoming increasingly difficult. Increasing numbers of British Greylag Geese in core wintering areas for the migrants, such as Shetland, Orkney, the Moray Firth, Bute and other parts of Scotland and Ireland means that extra surveillance is needed to assess the abundance of summering birds before subtracting these figures from winter counts. An attempt to enhance surveillance of Iceland Greylag Geese has been made through a review of current monitoring. The outcome has been to focus on a single weekend in mid-November to count the entire flyway, combined with a rolling programme of summer counts to try to better estimate the abundance of British Greylag Geese in areas where the two populations over-winter.



Photo: Tom Clare



Photo: Thomas Heinicke

Taiga Bean Geese wintering in Britain in 2013/14

Carl Mitchell

In Scotland, the first group of Taiga Bean Geese were recorded on 29 September at the Fannyside Muir roost site and totalled 162 birds. This was an unusually high number of early arrivals compared to previous years. On 20 November, the winter maxima was reached when a total of 237 birds were recorded at Wester Jaw. A relatively small sample of 87 birds from the winter flock contained 34.5% young, with a mean brood size of 2.43 young per successful pair. Fourteen Bean Geese were caught on the Slamannan Plateau in early October and five of these were fitted with telemetry devices. These proved invaluable in studying the birds' feeding and roosting areas (see *GooseNews* 12:7). In Norfolk, the Bean Geese arrived in the Yare Valley late in the autumn, with the first birds seen on 20 November, and left earlier in the spring than normal. The peak count was the lowest recorded in recent years at just 49 birds. This may have been partly due to the mild winter weather experienced in 2013/14, although, the decline in numbers is part of a longer term trend at that site and for the population as a whole. No ringed birds from Sweden were seen during the winter.

Many thanks to Angus Maciver (Bean Goose Action Group) and Ben Lewis (RSPB) for providing additional information above.

Latest monitoring of British Greylag Geese in Scotland 2013

Carl Mitchell

British Greylag Geese are doing remarkably well! With many wild bird populations associated with farmland suffering long-term declines, Britain's only native breeding goose is bucking the trend and increasing in both abundance and distribution. So much so that in Scotland, Scottish Natural Heritage are controlling the population in three pilot areas in an attempt to alleviate agricultural damage (see *GooseNews* 12:5). The three areas where British Greylag Geese are actively managed continue to be monitored and provide the basis for annual reporting. On Orkney, a survey in late August 2013 found 20,242 geese, a 5.3% decrease on the previous year. Breeding success was estimated at 18.1% young from a sample of 1,285 birds aged, with a mean of 2.23 young per successful pair. On Tiree, the late August count was 1,690 geese, although this is thought to be an underestimate of the number present at that time of year because the geese are becoming increasingly wary due to the control measures in place. By November, the count had increased to 2,200 geese and, with little immigration or emigration from the island, this seems a more likely figure for this resident population. Breeding success once again appeared to be high, with 1,350 birds aged and, of these, 35.3% were young with a mean brood size of 2.64 per



Photo: Dave Appleton

successful pair. The proportion of young in late summer flocks on Tiree has been over 30% in each of the last eight years. If nothing else, Greylag Geese are exceptional breeders. On the Uists, 7,031 Greylag Geese were counted in September, a decline of 18.7% on the previous year and 5,906 birds were counted in mid-February 2014. No age assessments were undertaken on the Uists.

Greenland White-fronted Geese in 2012/13

Tony Fox, Alyn Walsh, Ian Francis & David Norriss

It seems like we are doomed to report on falling numbers of Greenland White-fronted Geese year on year, so the almost expected bad news was that the coordinated count of the population undertaken on the wintering grounds in March 2013 recorded another fall on the previous year. However, the good news was that this 31st consecutive International Census of Greenland White-fronted Geese located 22,156 individuals, which was only a 1% fall on the same count in the previous year, although still the lowest recorded since spring 1986. This decline was actually much less than the fall of 13.0% in spring 2011.

As usual, the census was organised by the Greenland White-fronted Goose Study in Britain and by the National Parks & Wildlife Service in Republic of Ireland and Northern Ireland through a network of dedicated volunteers and professionals who do the hard work on the ground.

In Britain, the team detected 10,089 and 10,940 Greenland White-fronted Geese in autumn 2012 and spring 2013, respectively, which represented increases of 18.8% and 7.7% compared with autumn 2011 and spring 2012, respectively. The autumn 2012 total included a count of 10,023 in Scotland, of which 5,321 were observed on Islay (13.9% higher than in autumn 2011). Combined numbers from the rest of Scotland dropped very slightly to 5,424 in spring 2013 from 5,775. During the spring 2013 census, 10,873 geese were seen in Scotland, 5,449 of these being seen on Islay (encouragingly 26.4% higher than the previous year), 12 were located in England and 55 in Wales (a slight increase on 48 birds the year before).

Coverage of Ireland was also near complete, with all important sites covered at least once during the season. Counts were substituted for a very few sites where no count was made during the census period, contributing 6.2% and 2.6% of the autumn 2012 and spring 2013 totals, respectively. A total of 10,215 Greenland White-fronted Geese was recorded in autumn, an increase of 1.2% compared with 2011, and 11,216 during the spring census, representing a decrease of 8.4% compared with 2012. Wexford held a high proportion of the geese, with 7,908 seen during the autumn count (less than 1% lower than during autumn 2011) and 8,751 observed in spring (8.5% lower than in spring 2012).

Part of the recurring reason for the failure of the population to exceed numbers in the previous year since the late 1990s is the low levels of young in the population and this was again a contributory factor in the abundance of the population in winter 2012/13. As we reported for 2011/12,

changes in sea surface temperatures in the northern Atlantic seem to be having an adverse effect on the weather in west Greenland in spring, especially since the mid-1990s. So even though the summers in Greenland are warming considerably, cold temperatures and especially heavy snow increasingly characterize the spring weather just as the Greenland White-fronted Geese arrive on their long journey over the sea and up over the ice cap from Iceland in the spring. Summer 2012 in west Greenland was a reasonable one, with average June/July/August temperatures very similar to the last ten years and a little above the average for the last 42 years from which records exist. However, precipitation in April/May (mainly snow) was twice the average and the 5th highest since records began, continuing the trend since the mid-1990s for heavy snowfall in the period immediately prior to the arrival of the geese in central west Greenland. Females arriving after the arduous flight from Iceland staging areas have had to fly up over the inland ice cap and need to recoup depleted fat stores used to fuel their flight. Arriving to greater depths of snow makes finding nutritious forage difficult immediately after arrival, likely the explanation for the inverse correlation between spring snow and reproductive success since 1968 in this population.

As a consequence, in autumn 2012, we did not have any expectations for high proportions of young amongst returning geese and so it proved to be the case. Breeding success amongst geese wintering at British resorts continued to be well under the average since age ratios began, the average percentage young in Britain was 9.6% ($n = 6,884$ aged, compared to 8.8% last year), which included 11.1% on Islay (better than 9.9% last season) where numbers recovered a little, but still below the 13.9% average for 1962–2012 inclusive. In Ireland, the percentage young amongst aged flocks in 2012/13 was 5.0%, the lowest ever recorded, with just 4.9% young reported amongst the sample of 4,034 geese aged at Wexford, this percentage was the lowest recorded since records began.

Despite being relatively helpless to do anything about a population decline which seems more linked to weather conditions rather than anything we can change, it is desperately important that we continue to monitor this vulnerable and unique population and try to continue to understand the causes for its failure to maintain its abundance in our changing world. For that reason, as ever, we are deeply grateful for the incredible efforts of all our counters that provide counts, sample age ratios and search flocks for collared individuals.



Photo: Ed Burrell

Breeding success of European White-fronted Geese wintering in the UK in 2013/14

Kane Brides & Kees Koffijberg

The European White-fronted Goose has declined over the last 20 years as a wintering species in the UK, with usual wintering haunts seeing lower numbers than past winters. At a glance, counts from WWT Slimbridge, Gloucestershire, a key wintering site, show that 15 years ago during winter 1995/96, the peak count was 2,200 birds whilst in 2013/14 it was just 266 birds. The decline as a wintering species is thought to be predominantly due to a change in distribution, with birds 'short stopping' on the Continent – a phenomenon that is being observed amongst other migratory waterbird populations. Conversely, White-fronted Goose numbers wintering in The Netherlands have been increasing, as milder winter conditions further east of the UK encourage birds to stay within other countries along their flyway.

The GSMP continues to assess the breeding success of European White-fronted Geese in the UK with counts being made at WWT Slimbridge and RSPB Church Farm in Suffolk during last winter. In total, 389 birds were aged, of which 110 (28.3%) were young birds. Brood size counts were carried out at WWT Slimbridge

with 39 goslings counted among 18 broods, giving a mean brood size of 2.17 goslings per successful pair.

A much larger sample was undertaken in the western part of Germany, The Netherlands and Belgium and pointed to an intermediate breeding season in 2013. Among nearly 199,000 checked geese, 17.4% were young birds. Although some data still have to be collated, the large sample (about 16% of the flyway population) probably gives a good indication of breeding success in 2013. There was little variation among the different regions, apart from the sample from Belgium which had 31.4% young birds. As in previous years, towards the south western edge of the winter distribution (*i.e.* Belgium and UK) the percentage of young is usually higher than in the core wintering areas in The Netherlands and Germany. Brood size showed considerable variation among the samples (1.15 to 2.14), and was, on average, 1.68 young per successful pair.

Many thanks to Martin McGill (WWT), David Thurlow (RSPB) and observers on the Continent for providing counts.

Greenland Barnacle Geese wintering in Scotland in 2013/14

Carl Mitchell

There were four coordinated counts on Islay, the most important wintering site in the UK for Greenland Barnacle Geese, during winter 2013/14. These were 46,931 on 13 November, 36,244 on 13 December, 41,952 on 14 January and 39,909 on 14 March. The mean of these four counts was 41,259 birds. This represents a 12% decline compared to winter 2012/13, when an average of 46,903 geese was recorded. The Barnacle Geese on Islay are currently under scrutiny as SNH prepare management options for the future. Using SNH counts of the geese on the island there are indications that the population has been stable since about 2004. Outwith Islay, not all sites were counted in winter 2013/14, since complete coverage of all known wintering haunts is only checked once every five years

(see *GooseNews* 12:9 for results of the census in 2013), however, a winter peak of 2,425 birds was recorded at South Walls, Orkney. In December 2013, 835 birds were recorded on Coll and 2,750 on Colonsay, whilst in March 2014, 646 were counted on Danna and 4,369 on Tiree. Breeding success is measured annually on Islay and, as in 2012, counts in 2013 revealed a poor breeding season. Just over 8,000 birds were aged and showed that 5.5% were young, with a mean brood size of 1.78 young per successful pair. On Tiree, a sample of 1,220 birds held 6.5% young and a mean brood size of 1.44 young per successful pair.

Thanks go to Malcolm Ogilvie and John Bowler for providing age counts and to SNH for providing goose counts.

Photo: James Lees



Svalbard Barnacle Goose monitoring in 2013/14

Larry Griffin

The adopted population count for the Svalbard Barnacle Goose in winter 2013/14 was 38,100 compared to 31,000 for the previous winter. This was a much bigger jump in the population than would be predicted from the fairly modest breeding success of 7.0% that was recorded on the wintering grounds of the Solway Firth. This apparent discrepancy requires some attempt to explain it and it is possible that three or more factors have played a role. Firstly it seems likely that last winter's count was an undercount as it recorded a drop from nearly 34,000 in 2011/12 down to 31,000 in 2012/13, and although it had not been a great breeding season such a drop would not have been predicted. Of course, these are adopted population counts which do not report the maximum peak count recorded in a winter as it seems prudent with repeated counts to try and moderate for any possibility of double-counting across such a large estuary and also any over-counting of large flocks in places where visibility is not 100% and some element of estimation is required of the observer. Thus, in 2011/12 a peak count of 35,727 was recorded and in 2012/13 a peak of 32,044 was recorded. Not a huge difference to the figures reported, but it can be seen that the 38,000 this winter is not such a huge leap from the peak of nearly 36,000 in 2011/12, if the 2012/13 count is considered to be the aberrant count.

Winter 2012/13 was very harsh on the Solway and geese were recorded in large numbers on farms (as noted from the number of complaints) where they had been little recorded before, presumably due to the lack of food resources in their more traditional feeding areas. Thus, it seems entirely possible that birds were in different areas to usual during winter 2012/13 and so the counts could have been underestimates due to the birds having been more spread out across the Solway. Secondly, this winter, due to various time constraints, many of the age ratio assessments were carried out before mid-November which although not very different

to usual meant that most assessments were done when there may have been just 30,000 geese on the Solway, numbers not peaking until mid-November at the earliest. It was observable that whereas juveniles were fairly hard to spot at the start of the winter, at some point there was a fairly dramatic improvement and they were much easier to see in the flocks when ring reading for example. Thus, it also seems there was a later arrival of families than usual and so if juvenile counts had been done later in the season these would have been picked up. Also, coupled with this there was an impression gained that many of the families were concentrated in flocks on the south side of the Solway where only a couple of age assessments were carried out. This perhaps fits with the emerging pattern of use of the southern Cumbrian marshes by greater numbers of geese for longer periods during the winter, from Rockcliffe Marsh in the east to Skinburness Marsh in the west. Good numbers are often now recorded from mid-October right through to mid-April for marshes such as Newton and Calvo and this perhaps represents a colonisation by a more productive sub-population than is seen on the Scottish side of the Solway where juvenile counts seem to be lower. This requires further investigation if we are to understand count fluctuations more fully, or alternatively count fluctuations in what is now a much bigger and more dispersed population are accepted as being par for the course when counter coverage is necessarily limited, and figures are averaged over a longer time period to get a truer indication of what the population might be doing. The trouble is, as with many such counts, by the time the data are assembled and the patterns are becoming clear the season is all over, the geese have gone and it is difficult to investigate what really happened – there is always a lag time between what we count and what we theorise about them afterwards!

Breeding success of Dark-bellied Brent Geese wintering in Britain in 2013/14

Kane Brides

It is well documented that the breeding success of Arctic nesting species is greatly influenced from year to year by cycles of lemming and predator abundance on the breeding grounds, as well as weather conditions. Information from monitoring stations on the tundra show that rodent abundance within the Taymyr Peninsula, where Dark-bellied Brent Geese predominantly breed, was average to moderate. Lemming abundance increased substantially in 2013 compared to extremely low numbers in 2012. The Arctic Fox is the main predator of Dark-bellied Brent Goose goslings and the occurrence of foxes dropped sharply in 2013 compared with a record high in 2012. Together, these factors are likely to have positively influenced the breeding success of Dark-bellied Brent Geese, producing a better breeding season than 2012. This is borne out in the data collected in the UK which show that wintering flocks contained 15.4% young, notably higher than the previous ten-year mean (10.2% for 2003/04–2012/13), and a mean brood size of 2.49 young per successful pair, which was similar to the mean for the previous ten years (2.19).

Thanks go to all the counters who supported this work by submitting an impressive number of age assessments of Dark-bellied Brent Geese in 2013/14.

Photo: Graham Catley





Photo: Tristan Reid

Another poor breeding year for East Atlantic Light-bellied Brent Geese in 2013

Preben Clausen, Ross Ahmed & Andrew Craggs

The peak count of East Atlantic Light-bellied Brent Geese at Lindisfarne NNR, Northumberland was of 3,500 birds in November. Seven age assessments of the geese were carried out from late September through to early December 2013 at Fenham Mill and Fenham Flats. The largest sample of 2,000 aged birds, made on 27 September, contained 84 young within the flock (4.2%). Later samples had even fewer goslings, with the second largest sample of 1,592 birds holding only seven goslings (0.4%), whereas samples of smaller flocks had slightly larger percentages of young (6.3% and 7.4% in two flocks of 96 and 108 birds, respectively). No brood size data were collected at Lindisfarne. These counts were part of the annual flyway-based compilation of breeding success. In Denmark, a further 1,674 birds were aged, with slightly higher productivity estimates than those obtained in England. The Danish estimate thus added up to 7.0% young and a mean brood size of 2.11 young (n = 47) per successful pair. Combining the Danish early October data with the largest Lindisfarne sample gave an overall population productivity estimate of 5.5% young.

As mentioned in previous issues of *GooseNews* (see 12:10), the occurrence of low breeding success in this population is increasingly common and a cause for concern, but the reasons for this are not well understood (see Clausen, K.K. & P. Clausen. 2013. Uneven impacts of climate change induce phenological mismatch in long-distance migrating birds: Potential negative impacts on reproduction. *Oecologia* 173: 1101–1112). Given the poor breeding success, one would only expect a slight change in the population estimate, which was indeed the case when data from the internationally coordinated early October count from either side of the North Sea were combined. This survey gave an updated population estimate of 6,900 birds – Lindisfarne held about one third of the total population with Denmark supporting the remainder.

The UK authors carried out age assessments in Lindisfarne. Contributions to age assessments in Denmark were provided by Henrik Haaning Nielsen, Jens Peder Hounisen and Keld Henriksen.

Recent successes with capture and marking

Kane Brides

After several years of no catches of Pink-footed Geese, it is pleasing to report that 171 newly colour-marked individuals were recently caught. During summer 2013 WWT's Carl Mitchell joined Arnór Þórir Sigfússon and Halldór Stefánsson (East Iceland Natural History Society) in central Iceland where they successfully rounded up 71 moulting Pinkfeet, which included some family parties. The majority of geese were fitted with readable neck collars and some with leg rings; two birds were also fitted with GPS tracking devices attached to their neck collars (see page 8). On the wintering grounds, Raymond Duncan and a team from Grampian Ringing Group had a cannon net catch of 91 Pink-footed Geese at Blackburn, Aberdeen in January 2014, where two further GPS tracking devices were deployed. Kenny Graham of Highland Ringing Group caught another nine Pinkfeet at Durness in March 2014, the first to be caught there.

Staying with Icelandic species', during summer 2013 Sverrir Thorstensen was joined by Jon Middleton and WWT's Kane Brides to capture and colour-mark Whooper Swans in northern Iceland. The team visited several known breeding locations as well as targeting moulting flocks of failed/non-breeders. A flock of 60 moulting birds on Kalfborgarvatn provided a good opportunity to add newly colour-marked birds to WWT's ongoing long-term study on the species. In total, 134 birds were captured and marked during this trip.

During November 2013, 36 Whooper Swans were caught in the swan pipe on the reserve at WWT Martin Mere in Lancashire. WWT staff were particularly interested in assessing the condition of these birds by obtaining weight data at the start of the winter, which is used to help determine weight loss during migration, weight gain during the winter months and annual variation in arrival condition. The BBC's Mike Dilger joined staff to film the catch as part of a feature about migration on *The One Show*. At WWT Caerlaverock in February 2014, an impressive 148 Whooper Swans were caught in the swan pipe, and four birds were also caught at a cannon net catch targeting Bewick's Swans on the Ouse Washes, Norfolk. Here, a team of WWT staff and volunteers spent many hours in the field, attempting a catch; the aim being to attach GPS devices to the swans to collect detailed information on their migration routes. The waiting finally paid off, with a grand total of 18 Bewick's Swans captured eight of which were fitted with data loggers (see page 6). We're extremely grateful to volunteers Steve Heaven and Alison Bloor at WWT Slimbridge, Ailsa Hurst, David and Estelle Walsh at WWT Martin Mere and to Sheila Stubbs at WWT Caerlaverock for their help in compiling sightings of colour-marked Whooper and Bewick's Swans throughout the winter.

Elsewhere, fourteen Bean Geese were caught on the Slamannan Plateau, near Falkirk, central Scotland in October 2013, of which 13 were newly ringed. This brings the grand total ever ringed in Britain and Ireland to 38. On Islay, a total of 13 Greenland White-fronted Geese, and seven Greenland Barnacle Geese, were caught as part of a project using telemetry devices to look at winter site use and reactions to disturbance of the Whitefronts (see page 14). In Durness, at the very north western tip of Scotland, Kenny Graham of Highland Ringing Group caught nine Greenland Barnacle Geese.

The 2013/14 winter was notable for Canadian Light-bellied Brent Geese for a number of reasons. Firstly, it soon became clear that it had been a disastrous breeding year for the species, with productivity in most flocks being well under 1% young. Secondly, the extreme storminess of the winter weather led to the scouring, or changing the profile of, many of the traditional beaches and estuaries used by this most maritime species of goose. This had a significant effect on the distribution of the birds, particularly on the more exposed open coasts.

Cannon netting in Ireland was again mainly centred in the greater Dublin area, with a total of 29 geese caught in three successful attempts in the late autumn. This was followed by three further catches in February (96 birds caught), and 103 more birds were caught on the North Bull saltmarshes in two catches in March. A frustrating week in County Kerry following this resulted in only three birds being caught, despite the presence of over 1,000 geese in the large saltmarsh area. The Dublin catches were primarily to facilitate a new University of Exeter study into the effects of migration on individual birds across the whole extent of the flyway.

Towards this end, 105 geese were captured in nine catches in May 2014, at an area just south of Reykjavik in Iceland. Many thanks go to the cannon netters, Stuart Bearhop, Kerry Mackie and Alan Lauder, and to all the support teams of volunteer helpers in Ireland and Iceland. A joint University of Exeter/Irish Brent Goose Research Group (IBGRG) team are to visit the breeding grounds in Canada this summer, in the first expedition to be mounted there since 2007.

At time of writing, sightings of marked Light-bellied Brent Geese in the winter of 2013/14 number 11,423 records of 1,568 individuals, received from 174 observers. The database, managed by the IBGRG, now stands at about 144,000 records, gathered since the start of the project in 2001. It is pleasing to report that two of the birds caught at the very first catch at Wexford (coded ISYY and JJYY) continue to be recorded, wearing their original plastic leg rings. Favourable weather conditions for the migrations both from and to Iceland resulted in fewer geese dropping in on the Scottish Islands en route in autumn 2013 and spring 2014. Many thanks to all who contributed records from throughout the flyway.

Staff from the British Trust for Ornithology (BTO) continue to catch Greylag and Canada Geese at their Nunnery Reserve in Norfolk with 46 birds in total now colour-marked (11 Greylag and 35 Canada Geese). These geese have generated a good number of re-sightings. A moult roundup undertaken at Hickling captured 27 Greylags and these birds have generated 171 sightings in total. Movement from these birds showed that they have travelled along the coast to Cley and Havergate Island.

With thanks to Graham McElwaine (IBGRG) and Lee Barber (BTO) for their contributions to this article.



Photo: Sacha Dench

Releasing Bewick's Swans on the Ouse Washes.

Conservation and research news

50th Anniversary of WWT's Bewick's Swan study

Julia Newth

In February, we reached a landmark in the history of animal studies as WWT celebrated 50 years of Bewick's Swan research, making this one of the longest studies on any species in the world today.

Since Sir Peter Scott initiated the project in 1963, it has grown from humble site-based observations to an international population study in a collaboration that continues to this day involving many researchers and conservationists along the flyway. Much information has been gathered on the swans' social behaviour, their population dynamics (including variation in their breeding success and survival rates) and factors

affecting their choice of wintering sites. The study has seen an increase in population size up to the mid-1990s, after which numbers have steadily declined. Concern for the species led to the development of the Bewick's Swan Action Plan which aims to halt the decline. This was adopted by the African-Eurasian Waterbird Agreement in 2012 and WWT has recently been named as official coordinators of its implementation. This is therefore a challenging time for the Bewick's Swan but with an international effort and focus and with such a comprehensive knowledge of the species, it is hoped that the current decline will be reversed and we will be able to give a positive report at the 60th anniversary of the study in ten years time.



Photo: WWT

Bewick's Swan bill patterns drawn by Sir Peter Scott.

AEWA Action Planning Workshop for the Taiga Bean Goose

Mikko Alhainen

An African-Eurasian Migratory Waterbird Agreement (AEWA) International Single Species Action Planning Workshop for the Taiga Bean Goose took place on 12–14 November 2013 in Tuusula, Finland. The meeting was hosted by the Finnish Ministry of Agriculture and Forestry and the Finnish Wildlife Agency and was attended by representatives from 11 of the 14 principal range states for the species as well as representatives from the international conservation and hunting communities and the UNEP/AEWA Secretariat. This action planning process is the first of its kind under AEWA as it deals with a declining and huntable population for which an adaptive harvest framework is foreseen to be developed.

The Taiga Bean Goose is a quarry species in many range states that has experienced a long-term decline, mainly attributed to overharvest and habitat loss. The species was therefore upgraded to Category 3c* in Table 1 Column A of the AEWA Action Plan at the 5th Session of the Meeting of the Parties to AEWA in May 2012 in France and was consequently prioritised for an AEWA International Single Species Action Plan (ISSAP).

The long-term goal for the species will be to restore the population to a favourable conservation status and workshop participants agreed that in the short-term – within the next ten years – the population size should be stabilised at least at the current level. In addition, participants agreed to divide the Taiga Bean Goose population into four sub-populations or management units based on their clearly distinct breeding areas: 1) Western (West Sweden, North-Western Denmark, Norway, United Kingdom), 2) Central (Russia (Karelia), Finland, Sweden, Northern Norway, Eastern Denmark), 3) Eastern 1 (Russia (W Siberia), Estonia, Lithuania, Latvia, Belarus, Ukraine, Poland, Germany and the Netherlands in cold winters) and 4) Eastern 2 (Russia (W Siberia), Kazakhstan, North-Western China, East Kyrgyzstan).

The workshop also prioritized activities to be implemented by range states immediately, in order to

obtain more key information on the species. These include undertaking an analysis of available data for the Taiga Bean Goose to determine delineation of stocks, survival rates, and likely sustainable levels of off-take in comparison with current levels as well as ensuring adequate annual monitoring in all appropriate range states, including coordinated mid-winter counts to estimate population sizes (starting in January 2014), productivity, marking to monitor annual survival and hunting bag statistics. The main workshop outcomes as well as the activities for immediate implementation will be communicated to all range states by the UNEP/AEWA Secretariat.

Next steps in the action-planning process will include the consultation of the draft ISSAP being prepared by the drafting team with the governments of all principal range states during the second half of 2014. The final draft is expected to be submitted for adoption to the 6th Meeting of the AEWA Parties in November 2015.

GSG Goose Bulletin

Johan Mooij

The *Goose Bulletin* is the official bulletin of the Goose Specialist Group (GSG) of Wetlands International and the IUCN Species Survival Commission. 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 6 to 18 are available to download at <http://www.geese.org/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). Contributions for the coming 19th issue should be sent to Johan before 30 September 2014.



Photo: Thomas Heinicke

5th International Swan Symposium

Eileen Rees

The 5th International Swan Symposium (ISS) of the Wetlands International / IUCN SSC Swan Specialist Group (SSG) was held at Easton, Maryland, USA from 3–6 February 2014. International swan symposia have been convened at roughly ten-year intervals since the inaugural meeting at Slimbridge, UK in December 1971, with subsequent gatherings at Sapporo, Japan (1980), Oxford, UK (1989) and Airlie, Virginia, USA (2001). The 5th ISS was hosted by The Trumpeter Swan Society (TTSS) and coincided with the 23rd TTSS Conference. John Cornely (TTSS Executive Director, now retired on a high point following an excellent meeting!) and Becky Abel (Associate Director) co-chaired the host committee with Jerry Serie (Local Committee chair) whilst Eileen Rees coordinated the scientific programme along with the Scientific Committee members; John Cornely, Bart Nolet, Chris Perrins, Ma Ming and Scott Petrie.

About 100 swan researchers and conservationists attended from 16 countries, from Australia, Canada, China, Denmark, Estonia, Germany, Netherlands, Iceland, Japan, Latvia, Lithuania, Poland, Russia, Sweden, UK and the USA. Three days were dedicated to presentations and workshops, which covered a wide range of information and issues. The talks considered all aspects of swan ecology, with sessions on: 1) populations and distribution, 2) habitat and diet, 3) management, 4) breeding biology, 5) migration strategies, and 6) threats to swan species. Key management issues – with voices on both sides of the debate – included the control of the non-native Mute Swan within North America. The illegal shooting of migratory swans in Europe and the illegal poisoning and trapping of swans in China were raised as points of particular conservation concern. A special workshop led by the Avian Power Line Interaction Committee

About 100 swan researchers and conservationists attended from 16 countries...

(APIC) addressed avian interactions with power lines and focused on methods to minimise swan collisions with the cables. Three other workshops were convened, on the use of stochastic growth models for estimating swan populations (led by Oz Garton), the organisation of the SSG, and on the implementation of the AEWA Bewick's Swan Action Plan.

Other highlights included a local field trip sponsored by Waterfowl Chesapeake and Waterfowl Festival to observe Tundra Swans and other waterfowl wintering on the eastern shore of Chesapeake Bay, coupled with a stop at Blackwater National Wildlife Refuge and Visitor Centre. Refuge staff gave a presentation on the unique wetland ecosystem that supports the diverse flora and fauna of the bay. The banquet on Wednesday night featured a presentation by the author and naturalist Tom Horton and award-winning photographer David Harp, who spoke on the bay's bounty and beauty and underscored future challenges of living on the edge between land and water. A special lifetime membership award was presented to Easton resident Don Cochran, the one living founder of The Trumpeter Swan Society that was established in 1968. A special TTSS lifetime achievement award to Bill Sladen was accepted by Tom Wood on Bill's behalf. Pelle Andersen-Harild (Denmark) received a presentation for being the only person to have attended all five international swan symposia; Julius Morkūas (Lithuania) and Bart Nolet (the Netherlands) were

highlighted as each having given three presentations during the meeting. TTSS President Gary Ivey proclaimed the conference an overwhelming success, and stated that "...the collaborative efforts to exchange vital information among swan researchers and managers at this conference will significantly advance our understanding and conservation of swans worldwide."

Following on from the meeting, several of the papers presented have been submitted for publication in the 2014 edition of the scientific journal *Wildfowl*, so should be accessible on the journal's website (<http://wildfowl.wwt.org.uk/index.php/wildfowl>) later this year. Citation details for these and for papers presented that have published elsewhere will also be listed in the rejuvenated SSG Newsletter. Meanwhile, there was universal agreement within the Group that we should meet more frequently, perhaps at five year intervals, with the 6th International Swan Symposium now scheduled for 2019.



John Cornely (USA, left), with Scott Petrie (Canada), during presentations at the 5th International Swan Symposium banquet, February 2014.



Pellen Andersen-Harild (Denmark, right, with Eileen Rees), recognised for his attendance at all five international swan symposia since the first meeting was held at Slimbridge, UK, in 1971.



Tundra Swans feeding in stubble fields during the field excursion to Chesapeake Bay.

16th meeting of the Goose Specialist Group

Bart Ebbinge

The 16th meeting of the Goose Specialist Group (GSG) is being held in Beijing, China from 22–25 November 2014 and registration for the meeting is now open. To register please visit either the GSG website (<http://www.geese.org/gsg/>) or the conference website (<http://gsgm2014.csp.science.cn>).

Presentations (both oral and poster) are most welcome and this should be indicated through your personal account on the registration website. The conference fee is US\$ 300, payable in advance (see information on the registration website) and the hotel fee is an additional US\$ 300. Those who would like to join the post-conference excursion to Poyang lake (25–27 November 2014) are required to pay a further US\$ 600 to cover all extra costs including food, lodging and flights from and back to Beijing.

On behalf of the scientific committee (Anthony Fox, Denmark; Cao Lei, China; John Takekawa, USA; Masayuki Kurechi, Japan; and Ray Alisauskas, Canada) and the Research Centre for Eco-Environmental Sciences in Beijing, I hope to see many of you in November 2014.

The proceedings of the 15th meeting of the GSG, held in France in January 2013, have appeared as a special edition of the journal *Wildfowl*, available on the journal's website (<http://wildfowl.wwt.org.uk/index.php/wildfowl>).



Photo: WWT

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

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

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