

The newsletter of the Goose & Swan Monitoring Programme

goosenews

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How many geese?

**An audit of northern hemisphere
goose populations**

Latest results of GSMP surveys





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Editorial

Welcome to the 2018 edition of *GooseNews*.

Every autumn, the Goose & Swan Monitoring Programme (GSMP) is able to report on the status of the UK's native goose and migratory swan populations thanks to the enormous effort of the counter network, the vast majority of which are volunteers. Their continuous support, along with that of other similar recording schemes, like the Wetland Bird Survey, enables the UK to report to various international organisations and agreements on the status of the goose and swan populations it supports.

Data collated through the GSMP have recently contributed to the latest AEWA Conservation Status Report - a report which summarises the status and trends of all migratory waterbird populations listed in

Table 1 of the AEWA Agreement. This major review underpins the prioritisation of conservation action carried out by Parties to AEWA, as well as any changes to the legal status of populations required. The report is due to be submitted to the next AEWA Meeting of Parties, which will be held in December 2018 in South Africa. Other items on that meeting's agenda will include the management plans for the Northwest European population of Greylag Goose and all three populations of Barnacle Goose.

GSMP data have also recently been used in a review carried out by the Conservation of Arctic Flora and Fauna (CAFF), the biodiversity working group of the Arctic Council. Earlier in 2018, CAFF published a report summarising the findings of its recent audit of the

distribution, status and trend of all natural wild goose populations in the northern hemisphere: that's all 68 populations of 15 species of the *Branta*, *Anser* and *Chen* genera. So how many geese are there? Take a look at Tony Fox and Jim Leafloor's article on page 7 to find out more.

And why do we need to know how many there are and where they are? Without the knowledge gained through the continued monitoring of our geese and swans, we would be unable to protect them when and where they need it (such as through EU Special Protection Areas (SPA); see *GooseNews* 16: page 31), undertake the appropriate conservation action and research to help them recover (such as for the Greenland White-fronted Goose; see

GooseNews 16: page 6), and undertake the correct management and provide sound advice for ensuring sustainable goose management and hunting (such as through the AEWA European Goose Management Platform; see page 29 of this edition).

And of course, we would be unable to bring you our splendid annual newsletter that is filled with all the recent news, tales and results from goose and swan monitoring in the UK... and in some cases further afield.

To all contributors, counters, ringers and others, thank you all for your tremendous and continued support of the GSMP.

Colette Hall

Photo: Nick Cottrell / WWF

Survey dates for 2018/19

Icelandic–breeding Goose Census (ICG)

The IGC national organiser is Kane Brides (kane.brides@wwt.org.uk)

The coordinated census dates for autumn 2018 are as follows:

Pink-footed Goose: 20/21 October and 17/18 November

Iceland Greylag Goose: 17/18 November

Ideally, all sites supporting Pink-footed Geese should be covered during the October and November counts, whilst those holding Iceland Greylag Geese should be covered in November.

We would like to encourage all counters at sites within the range of Iceland Greylag Geese to also carry out a count during September if the site also supports British Greylag Geese. September counts are not strictly coordinated but ideally should be carried out during the middle of that month, although any counts made during September will be of value.

If you are unable to count on the above dates, please contact either your Local Organiser or Kane Brides, so that we may try to arrange cover of your site by another counter.

Greenland White-fronted Goose Census

The census is organised by the Greenland White-fronted Goose Study (<https://greenlandwhitefront.org>).

Please contact the organiser Tony Fox (tfo@bios.au.dk) for further details about the census.

Count dates for the 2018/19 census are as follows:

Autumn and spring coordinated censuses:
8–12 December and 9–13 March

Other preferential dates for local site monitoring:
17–21 November, 12–16 January and 9–13 February

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

Contributions welcome!

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 Colette Hall (see back page for contact details).

Age assessments

Age assessments will continue during 2018/19 as usual. The survey periods vary between species and are shown below. If you are interested in helping with these surveys, please contact WWT's Monitoring Unit at monitoring@wwt.org.uk.

Population	Period	Notes
Whooper Swan	Oct – Jan	focus on mid-Jan
Bewick's Swan	Nov – Feb	focus on mid-Jan
Iceland Greylag Goose	Oct – mid Nov	care needed with age identification
British Greylag Goose	Aug – Sep	
Pink-footed Goose	mid Sep – mid Nov	
Bean Goose	Oct – Nov	
European White-fronted Goose	Oct – Jan	focus on Jan
Greenland White-fronted Goose	Oct – Jan	focus on Dec
Dark-bellied Brent Goose	Sep – Mar	focus on Oct – Nov
Light-bellied Brent Goose (both populations)	Sep – Mar	focus on Oct – Nov
Barnacle Goose (both populations)	Oct – Dec	

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 (<https://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 <https://monitoring.wwt.org.uk/our-work/uk-waterbirds/goose-swan-monitoring-programme/colour-marking>.

GSMP web pages

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

Enter your IGC and age assessment records online

Counters taking part in the Icelandic-breeding Goose Census (IGC) or undertaking age assessments can enter data online using WWT's Waterbird Monitoring Online website.

You will need to register to use the system at <https://monitoring.wwt.org.uk/recording/>, where help pages are available to guide you through the process of registering and entering counts.

If you need any further information on how to use the website, please contact WWT's Monitoring Unit at monitoring@wwt.org.uk.



Photo: Vince Ellis / WWT

Wild geese in my life

Julian Taylor

Julian has been an enthusiastic supporter of goose conservation since his school days, and here he shares a few memories of his goose related adventures.

My first favourite bird was a male Chaffinch feeding under beech trees. Soon, this was followed by Curlews (alongside hares, otters and wild daffodils) and then Teal courting and displaying on small tarns near Windermere town. A fairy godmother gave me Peter Scott's books, *Morning Flight* and *Wild Chorus*, and I was hooked.

At school I wrote to Peter Scott. He came and talked about his lighthouse days and visits to Persia. In return, I was invited to the Patch guest house at Slimbridge, and from the concrete pill boxes on the reserve, was shown 5,000 Whitefronts, two Lesser Whitefronts, a Bean Goose and a Red-breasted Goose. I became one of the original members of the Severn Wildfowl Trust [now WWT]. I wonder how many still survive?

While I was at university reading zoology, George Atkinson-Willes was organising wildfowl counts (from the centre at Slimbridge) under the guidance of the magical Hugh Boyd. With friends, I counted geese on the Wash, and we watched them moving into the Nene Washes; and then we spent time rocket netting in Lincolnshire and recorded their wonderful calls while flying at dawn. The university air squadron was persuaded to fly me over the Wash hoping to count Brent Geese; but regrettably, it was an unsuccessful trip.

More rocket netting then followed along the Solway coast. I had known Rockcliffe Marsh as a boy; its area has doubled since then, and it is now the take off point for 25,000 Barnacle Geese or more for their May migration to breed in Spitzbergen. At Caerlaverock, under Hugh's control, we caught 300 or so Barnacles, which I believe is still a record. An earlier memory of Caerlaverock, when there were only 400 or so geese, was lying flat shivering violently – as I had forgotten my anorak – three yards away from feeding Barnacles. Since then their numbers have gone up 100 fold to 40,000. And I think I saw a Pallid Harrier there three years ago.

With two friends, I walked across Iceland from north to south, camped in the meadows of the Thjorsa, and watched Pinkfeet flying north to Greenland for their moult migration, which then was only known for Shelduck but not for geese. Then on to Lapland where I swam and caught an adult Lesser Whitefront. My companion, a Lapp, was astounded and laughed and laughed watching a naked 'white' man swim.



Julian in Iceland, 1952, where they located Pink-footed Geese in the gorge below.

Later, there were visits to Islay for Barnacle Geese, where we saw a leucistic bird which I now suspect was a Snow Goose; and then to the southwest of Spitzbergen with Malcolm Ogilvie, wet and chilly (thanks to the weather) but happy. There we watched a vixen Arctic Fox playing with her cubs.

Twice I took a trip to Romania where we saw 5,000 Red-breasted Geese along the Danube delta, as well as 400 male Smew and countless White-tailed Eagles. Then there were the lush green fields of Wexford filled with Greenland Whitefronts; and the St Lawrence Seaway near Montreal, with Hugh and thousands of Snow Geese, many orange coloured with the mud from the tundra, migrating south for the winter. Have I been lucky?

Before I married, I lived in the Pilot Cottage at the Ribble Estuary next to a delightful Teal marsh at Longton. The M6 motorway at Preston was just being built and we were lent a JCB to dig ponds at my cottage for free! I watched with admiration the start of Martin Mere under the skilled guidance of Peter Gladstone and the charm of Janet Kear; and also the creation of the Caerlaverock reserve under the excellent care of John Doherty and Richard Hesketh. Since then, autumn numbers of Pinkfeet at Martin Mere have gone from 3,000 to over 30,000, and that of the Icelandic population to more than half a million!

These are just some of my memories of watching, counting and listening to wild geese, and being fascinated and realising how little I understood them. My current fascination is group selection *i.e.* altruism, the opposite to the selfish gene advocated by Richard Dawkins; and why do Greenland Whitefronts nest only in the west of Greenland, while thousands of Pinkfeet nest all along the east coast to the northwest tip? There is still so much to learn.



Photo: Graham Catley

An audit of northern hemisphere goose populations

Tony Fox & Jim Leafloor

The Arctic Council's Conservation of Flora and Fauna (CAFF) has been working intensively to compile data on the status and trends of arctic biodiversity reported in the impressive 674 page tome of Meltofte (2013). Within this framework, more detailed treatments of habitats and taxonomic groups are subsequently being undertaken, among the first of which is a review of goose populations. A summary report has just been published online which attempts to assess distribution, status and trends, based on expert authors using available data to provide historical assessments of all populations of northern hemisphere goose species (Fox & Leafloor 2018). A more detailed treatment of each of the identified population units is in preparation and should be available in the near future.

The audit suggests that there were at least 39.0 million geese in the northern hemisphere of 68 populations of 15 different species during 2011–2016. The most numerous were the "white" geese (*Chen*, Ross's and Snow Geese) with an estimated 17.2 million individuals of three species, mostly limited to North America, all of which have increased in the last ten years. 'Black' (*Branta*) geese numbered c.13.7 million individuals of 27 discrete populations from five species and showed variable trends, although all but eight had been stable or increased over the last ten years. 'Grey' (*Anser*) geese consisted of 35 flyway populations, 8.1–8.4 million birds, which, excepting the

circumpolar Greater White-fronted Goose *Anser albifrons*, are restricted to Eurasia. Fifteen *Anser* populations declined in the last ten years, mostly in East Asia. The Lesser Snow Goose, was most numerous, at c.12.6 million birds, but most populations numbered between 1,000 and 1 million individuals. Only the Fennoscandian Lesser White-fronted Goose sits on the edge of extinction with only 100+ individuals.

Most northern hemisphere goose populations have been stable or increased over the last ten years, but our ability to judge trends varies enormously between populations. The situation is best in North America, where abundance estimates are good, and trends are most reliable, and worst in Central and East Asia, where we lack good population estimates and data series with sufficiently long count data to provide a solid basis for calculating trends, although count data from Korea and Japan are excellent. The situation is rapidly improving in China, where count networks are established and coordination with flyway partners throughout the region are well advanced. In Central Asia, Wetlands International and partners are also working hard to improve count coverage.

In UK and Ireland, counter networks are excellent, reporting prompt and effective and count data stretch back to the 1950s. Elsewhere in Europe, however, many populations need a vastly improved and more effective coordination of the existing well-organised



count networks to generate annual assessments of abundance over recent decades. Data on annual species hunting kill are also lacking to determine the impacts of harvest on population change. However, these very issues are now being tackled for a limited number of critical populations (NW European Greylag, Taiga Bean, Svalbard Pink-footed Goose and Barnacle Goose) under the AEWA European Goose Management Platform (EGMP, as we reported in the last *GooseNews*, see Madsen *et al.* 2017).

We believe that European and North American goose stocks are thriving because they increasingly subsist on food provided by our modern agricultural landscapes outside of the breeding season. Geese achieve far greater nutritional and energy intake by feeding on farmland than they could ever achieve in the natural habitats that previously formed their traditional habitats (Fox & Abraham 2017). For example, ninety years ago in Europe, Brent Geese were exclusively marine birds (just read the accounts in Chapman 1928), but now they happily exploit winter cereals over the seawall from their former saltwater habitats, forage between dog walkers and football players in Dublin's parks and even on waste grains between ships in

Dublin Harbour! As a result, some populations have become independent of the limited geographical extent of their traditional habitats and as long as they have a safe roost to which they can commute at night, have potentially unlimited winter habitats in the form of agricultural land in large parts of North America and Europe as well as in Japan and Korea.

In contrast, the goose stocks in China are largely restricted to Yangtze River Floodplain wetlands, where telemetric studies show that they mostly seek food and sleep in the same areas as they never leave the security of the wetlands (Yu *et al.* 2017). This is the result of intense disturbance and persecution from people if they attempt to feed on adjacent rice fields and winter wheat (Zhao *et al.* 2018). The number of waterbirds using these Yangtze wetlands has been declining for the last ten years (Jia *et al.* 2018), and among the geese, this is specifically the result of habitat loss resulting from drainage, aquaculture and other adverse land management pressures. In Central Asia, our knowledge is worse, but improving. Loss of habitat, as well as unsustainable hunting mortality are thought to be the main reasons why populations there are in decline. For these reasons, the CAFF report has

proven to be particularly useful in highlighting areas where we lack good information and need improved monitoring.

Geese are among the arctic bird groups for which we have best knowledge about population size, but we still lack information about the relationships between breeding, staging, moulting and wintering areas for many goose stocks. Such knowledge is crucial if we are to identify discrete flyway units as a basis for their effective protection and management. Extensive marking programmes and the increasing availability of sophisticated tracking devices make it easier to follow the detailed movements of individuals. This is particularly relevant in East Asia, where our knowledge about flyway delimitation, migratory routes, key stopover sites, population sizes and trends are most rudimentary, but this is rapidly increasing with the use of such techniques (e.g. Wang *et al.* 2018).

At present, we are fortunate that most northern hemisphere goose populations show stable or increasing trends. It remains very worrying that the poorest known populations (for example, the Greylag Geese of Central and Eastern Asia) are those that we suspect are showing the most rapid declines.

To address these issues, we need not only to understand the rates of decline but their causes. Are the decreases, for example, a result of climate change, distribution shifts, reduced reproductive success or excess mortality? For many North America populations, we have samples of the ratio between adult and first winter geese from shot birds back to the 1960s, while in Europe we regularly coordinate the recording of field age-ratios. These annual assessments of production of young provide unique information on annual breeding success, and in conjunction with resightings and recoveries of marked geese, can be used to generate age-specific annual survival rates to determine the birth and death rates that affect annual population change. These, together with knowledge about population size and annual harvest, provide the basis for hypothesis testing and population modelling that can explain the causes of observed changes in population size. In North America, such a framework provides the basis for establishing

the basis for the management of goose hunting, mechanisms which were conspicuously absent in Europe until the advent of the AEWA EGMP. Elsewhere in Eurasia, there are few such mechanisms in place or in view.

It is therefore even more important in the interim that we strive to maintain and improve our annual monitoring of goose populations across the northern hemisphere to be able to generate trends in annual changes in population abundance. It is equally becoming vital to initiate and implement demographic surveillance of these populations to understand better the balance between survival and reproductive success and to provide the basis for the necessary conservation measures to secure a future for those populations that are of unfavorable conservation status.

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Counter Profile

Arthur Thirlwell, Greenland White-fronted Goose counter, Scotland

Arthur has been a stalwart member of the Greenland Whitefront counting team for over forty years and one of the Greenland White-fronted Goose Study's most loyal supporters. Here, Arthur describes how his passion for these particular geese was born and what triggers his annual bout of 'goose fever'.

My interest in ducks and geese started as a teenager in the mid-1940s, wildfowling at Bowness-on-Solway in Cumberland as it then was. In those early days, with rationing still in place after the war, it was common practise and an easy way to supplement the family dinner table.

In 1948, we moved north of the border to Annan, where my wildfowling continued on the northern Solway marshes. However, a chance encounter with a trailer acting as a hide, being towed behind a Land Rover driven by a certain Peter Scott, led to a greater interest in the conservation of some species. He was out trying to count and rocket-net Pink-footed Geese.

In the mid-1950s, as a WAGBI [Wildfowling Association of Great Britain and Ireland, now BASC] member, I became involved in a Mallard rearing scheme with other local wildfowlingers, rearing and releasing the birds into the wild to help increase stocks.

In the early 1960s, travelling further west in Galloway through work, I encountered my first Bean Geese near Castle Douglas. I would frequently drive past their haunts to check on how many were there, little realising that this would lead to decades of goose counting.



Photo: Mitch Weegman

I also became involved in a project to re-introduce Greylag Geese into the Sevenoaks Gravel Pits in Kent in the mid-1960s. Eggs were collected from Lochinch and Stair Estate near Stranraer and transported to Sevenoaks by a team of volunteers who had staging posts at regular intervals along the way to refill hot water bottles and warm up blankets. Our kitchen fire provided a welcome warming spot. In exchange for the Greylag eggs heading south, Canada Goose eggs were collected from Killington Lake en route, destined for the collection at Kinmount House near Annan.

In 1971, WWT's Caerlaverock Reserve opened and regular trips were made to read Barnacle rings.

In 1975, we moved to Castle Douglas, where my Greenland White-fronted Goose passion was born. I had known these geese near Stranraer and actively sought them out. I then discovered, and started counting, the geese around Loch Ken in that first winter and it wasn't long before I was submitting goose counts to David Stroud before then beginning a long relationship with Tony Fox, then at The Wildfowl Trust [now WWT].

In the early 1980s, I was counting between 280 and 350 geese at Loch Ken, but in 1997/98, I recorded a count of 450. The family groups were made up of a maximum of two to three juveniles at that time.

The Greenland White-fronted Geese frequented several regular locations on Loch Ken and the River Dee. The biggest challenge was often to find the geese, trudging or driving through muddy fields and farm yards to get access to some of the locations. This became a family joke about me being off on a wild goose chase again.

I have seen these favoured locations change over the years with nine different, specific sites used. The Loch Ken population, like many others, has always been a nervous group who would take to the wing at the least intrusion. Often the car, or a gorse bush, was my only weapon of stealth, sitting with binoculars or a telescope clamped to my face until I was so cold I had to give in.

In 2007, I met Larry Griffin from WWT. Larry was as passionate about the geese as myself, if not more so. As awareness of the conservation issues increased, so did the need for recording of numbers and, eventually, the tagging and collaring of individual birds as funding became available for such projects.

Between 1997 and 2015, I have witnessed a sad decline in the numbers of the Loch Ken flock of Greenland Whitefronts, dropping to 163 in 2015. I also witnessed a significant reduction in the use of the sites on the east side of the Loch. Perhaps the grass was greener on the other side.

It fell to Larry, in February 2008, to coordinate and execute the first Loch Ken catches to fit birds with neck collars and GPS loggers to track their movements. I kept Larry updated with the daily locations of the geese so he knew when and where to attempt a catch. I was fortunate that Larry kept me well informed of what was happening and when a catch was made, he called me to come and assist. At the first catch, five birds were

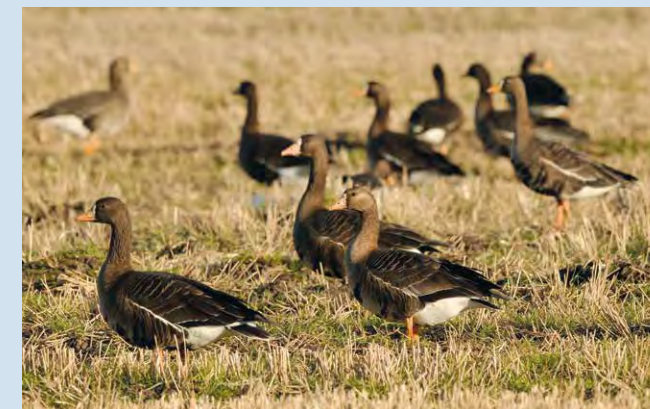


Photo: Alyn Walsh

ringed and fitted with loggers on collars bearing the codes V1A through to V5A. Such was the excitement at this project in the area that the local school children were asked to name the geese. V2A was affectionately called Speedy. He lived up to his name for his summer trip back to Greenland via Iceland, but sadly, extreme weather on his return trip saw him take seven days to walk across the icecap to the east coast of Greenland, where he dropped off the map and wasn't heard of again.

Subsequent catches in 2009 resulted in 13 birds being ringed. One of those birds, V6A, has been recorded again during the 2017/18 season. Fingers crossed he makes it back in 2018/19.

I also had a goose with an Irish accent put in an appearance this year. X0N, who was caught and ringed at Wexford Slobs, SE Ireland in 2012/13 arrived on Loch Ken having overwintered in Kintyre for 2013/14 and 2014/15. We still don't know where he spent the following two winters, but I'll be watching for him again in October. He would have been a good candidate for the name of Speedy. I last saw him on Loch Ken on 30 March and he was recorded in Iceland on 6 April.

Since 2015, I have been aware of an increase in the number in the flock – rising back up to number 185 geese. Perhaps more significantly has been the clear increase in brood size, with the family units containing between three and five juveniles. Clearly this will need further sustained increases in the flock numbers before we can be confident that the Loch Ken Whitefront flock is on the rise again.

Over the years, the Loch Ken flock has been as regular as clockwork, arriving 12–14 October and heading north again 10–15 April. Come the second week of October 2018, goose fever will set in again and I'll set out on my 43rd season of recording these birds. I've been frozen, dirty, eyed up by a bull, had my coat chewed by a Greenland Whitefront and spent hours washing my vehicle. I calculate conservatively that I will have driven over 20,000 miles in that time – enough to get to Greenland and back over six times. Why do I do it? For the sheer enjoyment of watching my goose family, through its ups and downs, and knowing that in my own small way, I am contributing to their long-term survival.

Latest news from GSMP surveys

The table below shows the total counts and the breeding success (percentage young and mean brood size) of goose and swan populations wintering in Britain and Ireland, recorded during various surveys in 2017/18, except the results for Greenland White-fronted Goose which are for 2016/17. Surveys were undertaken at an international or national scale, or at a few key sites. See the individual population reports that follow for further details.



Photo: Ian Francis

More detailed results are available on the GSMP web pages at <https://monitoring.wwt.org.uk/our-work/goose-swan-monitoring-programme/species-accounts/>

Population	Total count ¹	Percentage young	Mean brood size
Northwest European Bewick's Swan	-	5.7%	1.5
Iceland Whooper Swan	-	18.1%	2.1
Taiga Bean Goose	224 ²	14.4% (Slamannan)	2.13 (Slamannan)
Greenland/Iceland Pink-footed Goose	515,852 ³	17.1%	1.85
European White-fronted Goose	-	10.8%	2.0 (Slimbridge)
Greenland White-fronted Goose ⁴	20,556 ⁵	18.4% (Islay) 12.2% (Wexford)	3.04 (Islay) 3.13 (Wexford)
Iceland Greylag Goose	61,809 ³	19.9%	1.97
British Greylag Goose	-	37.6% (Tiree)	2.45 (Tiree)
Greenland Barnacle Goose	71,750 ⁶	5.3% (Islay) 3.3% (Tiree)	1.92 (Islay) 1.11 (Tiree)
Svalbard Barnacle Goose	42,600 ⁷	4.8%	1.79
Dark-bellied Brent Goose	-	1.0%	1.91
Canadian Light-bellied Brent Goose	35,042 ⁸	0.8%	2.05

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 for the Slamannan Plateau (data provided by the Bean Goose Action Group) and the Yare Valley (data provided by RSPB).

³ Flyway total. From: Brides, K., C. Mitchell, A. Sigfússon & S. Auhage. 2018. *Status and distribution of Icelandic-breeding geese: results of the 2017 international census*. Wildfowl & Wetlands Trust Report, Slimbridge.

⁴ Results presented for the Greenland White-fronted Goose are from surveys undertaken in 2016/17.

⁵ Flyway total. From: Fox, A.D., I.S. Francis, D. Norriss & A.J. Walsh. 2017. *Report of the 2016/17 international census of Greenland White-fronted Geese*. Greenland White-fronted Goose Study report.

⁶ Flyway total. From Mitchell, C. & C. Hall. 2018. *Greenland Barnacle Geese Branta leucopsis in Britain and Ireland: results of the international census, spring 2018*. Wildfowl & Wetlands Trust Report, Slimbridge.

⁷ Flyway total. WWT data.

⁸ Flyway total. All-Ireland Light-bellied Brent Goose Census data provided by the Irish Brent Goose Research Group

Bewick's and Whooper Swan breeding success, 2017/18

Julia Newth & Colette Hall

Bewick's Swans breeding in the Russian Arctic tundra have a relatively short season in which to raise their young, and weather conditions on the breeding grounds are known to be important in determining their success. In 2017, temperatures in the Pechora Delta (where a high concentration of Bewick's breed every year) were considerably lower than average during May, and the birds encountered harsh conditions in both the spring and early summer. As a likely consequence, the first eggs reported to have hatched in the Pechora Delta did so in early July indicating at least a three week delay in the birds' breeding season.

In Britain, the Bewick's started to arrive at their wintering grounds from 3 November (with the first birds sighted on the Ouse Washes). As the winter progressed, age assessments of 227 birds undertaken between 12 and 14 December suggested only 10.6% young present. A coordinated age assessment was carried out in mid-January when more birds had arrived, and of the 1,198 swans aged, only 5.7% were young birds: compared with 16.5% in January 2017 and a previous ten-year mean of 11.6% (2007/08–2016/17). Sadly, these results reflect those recorded for the Northwest European Bewick's Swan population as a whole. In January 2018, a total of 8,383 birds were aged across six countries in northern Europe (including Britain), of which only 3.9% were young birds. This suggests 2017 was a poor breeding season for the Bewick's Swans, with the harsh weather likely affecting their success.

Comparatively, the Icelandic Whooper Swan population had above average breeding success in 2017. Although the daily peak temperatures in Iceland in June were a few degrees below average, no extreme conditions that may have impacted on the swans' breeding success were reported. In January 2018, age assessments were undertaken across Britain and Ireland, and a total of 19,125 swans were aged, of which 18.1% were young birds: compared with 16.2% in 2016 and a previous ten-year mean of 16.2% (2007/08–2016/17).

A big thank you to everyone who helped with the age assessments, particularly to Graham McElwaine and the Irish Whooper Swan Study Group who coordinated the Whooper Swan counts in Ireland. And thank you to Jan Beekman and Wim Tijsen for providing the international data.



Photo: Vince Ellis / WWT

Icelandic-breeding Goose Census 2017

Kane Brides

During autumn 2017, the Icelandic-breeding Goose Census (IGC) entered its 58th year of monitoring the population size and breeding success of Greenland/Iceland Pink-footed Geese and Iceland Greylag Geese.

The October count produced a total of 515,852 Pink-footed Geese, an increase of 7.2% on the previous year (481,341) and the second highest count ever recorded, next to 536,871 in 2015. Fifteen sites held more than 10,000 Pink-footed Geese in October, with Montrose Basin, Angus, holding the highest number, an impressive 80,000 birds.

The breeding success of Pink-footed Geese was assessed at several locations on the wintering grounds in Scotland, Lancashire and Norfolk from early October to late November. Overall, 17.1% of the birds aged were juveniles, this being slightly lower than the previous ten-year mean ($18.4\% \pm 1.22$ SE) and the mean brood size of successful pairs was 1.85 goslings, again slightly lower than the previous ten-year mean ($2.0\% \pm 0.06$ SE).

The coordinated November count produced an estimate of 60,962 Iceland Greylag Geese, a decrease of 32.8% compared with the previous year. Whilst this result suggests a continuation of the recent population decline, which has previously been reported (see *GooseNews* 17: page 16), it is probable that undercounting in some areas in 2017 may have affected the overall estimate. Given that the annual breeding success of Iceland Greylag Geese was good during 2017 (see below), this suggests that either a degree of undercounting has taken place or the harvest in Iceland during 2017 was considerably higher than average. However, although harvest data for 2017 are not yet available, the annual figures tend not to vary much and it's therefore considered unlikely that a large increase in harvest has caused such a large observed decrease in the number of birds counted.

The majority of the Iceland Greylag Goose population is found in North Scotland, principally in Orkney, where it mixes with the resident British population. Therefore, to determine the number of Icelandic birds present during the census, an estimate of the number of British birds is deducted from the total count. However, no late summer count of the British population was carried out in Orkney in 2017; therefore, the total from 2016 (21,000) was used in the analysis. Hence, if numbers of British Greylags in Orkney have decreased since 2016, particularly due to the culls, the 2017 estimate for the Icelandic Greylags may be an underestimate.

Greylag Geese were aged in Caithness in October and November, with 19.9% young being recorded, this being lower than the previous ten-year mean ($22.1\% \pm 0.47$ SE) and the mean brood size of successful pairs was 1.97 gosling, also lower than the previous ten-year mean ($2.3\% \pm 0.08$ SE).

An additional spring census was also carried out on 10/11 March 2018. The spring censuses are undertaken every third year to determine the distribution of geese at this important time of year when they are feeding vigorously to store nutrient reserves for successful migration and breeding. These counts do not provide a way of estimating population size but do identify the key sites being used by the geese, which is important for ensuring the protected area network is comprehensive during their whole annual life cycle. In total, 122,387 Pink-footed Geese and 4,311 Greylag Geese were counted. Redkirk Point in Dumfriesshire, and Burton Marsh in Cheshire held the highest numbers of Pink-footed Geese, with 12,500 and 8,000 birds reported, respectively. Few sites holding Iceland Greylag Geese were counted in March and no counts were undertaken on Orkney, the main wintering location for the species, during the spring census.

Thanks to an exciting GPS tracking project looking in to the annual migration routes and daily movements between roosts and feeding areas of Pink-footed Geese (see the article on page 28), we are identifying new roosting locations being used by the geese on the wintering grounds. We will, therefore, be using the new information to identify new sites that require covering as part of the IGC. More details will be circulated to the IGC network ahead of the 2018 census.

As always, enormous thanks go to the network of counters who support the IGC each year and to the team of Local Organisers for their continued dedicated support in organising counts in their areas and ensuring the best possible coverage.



Photo: Mike Dawson



Photo: John Anderson

Taiga Bean Geese wintering in Britain in 2017/18

Carl Mitchell

Monitoring of Taiga Bean Geese was undertaken at the Slamannan Plateau, Falkirk, by the Bean Goose Action Group and at the Yare Valley, Norfolk, by RSPB reserve wardens during winter 2017/18. A peak count of 206 birds was recorded at Slamannan, ten birds fewer than the previous year (216).

At the Yare Valley, where the number of wintering Bean Geese has been declining since 1993/94, the peak count of just 18 geese on 27 November was five birds fewer than that recorded during the previous winter (23) and the lowest since 1954/55. The total count for the two sites (224 birds) was the lowest since 1982/83 and continued the long and slow decline in numbers wintering in the UK which probably reflects a decline in the overall flyway population.

In early November, breeding success was estimated from a sample of 118 birds at Slamannan, of which 17 were aged as first-winter birds (14.4% young), with a mean brood size of 2.13 young per successful pair. This is the best breeding success recorded in the flock after three years of very low productivity. The number of Bean Geese wintering at Slamannan has fallen from 300 birds, recorded as recently as 2007/08, to just over 200 in 2017/18. Recent low annual productivity may help explain why the numbers there are not increasing; however, it is surprising that with 14.4% young, the number wintering in Scotland did not increase slightly during the most recent winter.

Since 2012, a number of Bean Geese from the Slamannan flock have been caught and fitted with GPS tracking devices to help explain their migration routes. The resulting data have provided some fascinating information on the birds' movements, and as a couple of the tags are still transmitting, the story continues for

some of these birds. To follow their migration story go to <https://sites.google.com/view/scotlands-bean-geese/migration>.

The spring 2018 migration (revealed by the GPS tags) showed that the Slamannan flock encountered particularly harsh conditions on the near continent in March and April. It is surprising that the geese leave Scotland as early as the middle of February when they will encounter unknown conditions in northwest Denmark. Late lying snow hampered their rather rapid move north though Norway to central Sweden and what impact this will have on their breeding attempts will be revealed in autumn 2018.

Following the adoption of an international action plan for Taiga Bean Goose by Contracting Parties (including the UK) to AEWA in 2015, a process is now in place to enable and oversee the implementation of the conservation actions identified in the action plan. This process is managed within the scope of AEWA's European Goose Management International Working Group and latest information on progress can be found at <http://egmp.aewa.info/task-forces/taiga-bean-geese-task-force>.

Thanks to Angus MacIver, Larry Griffin and Ben Lewis for providing data reproduced here. And congratulations to Mike Thornton (Scottish Natural Heritage) who completed a MRes investigating the spatial distribution of Bean Geese at Slamannan in relation to habitat characteristics. Thornton, M. 2018. *Multi-scale habitat selection in Scotland's only population of western Taiga Bean Geese*, Anser fabalis fabalis, on the Slamannan Plateau, central Scotland. Unpubl. MRes thesis, Edinburgh Napier University. 106pp.

Greenland White-fronted Goose population monitoring in 2016/17

Tony Fox, Alyn Walsh, Ian Francis & David Norriss



Photo: Ian Francis

Following the fortunes of Greenland White-fronted Geese has become increasing nerve-wracking over the decades! While most European goose populations (with the exception of some Taiga Beans and Lesser White-fronted Geese) are generally doing very well and largely increasing, the poor *A. albifrons flavirostris* remains in the doldrums. During the period of rather depressing year-on-year declines since 1999, we seemed to hold our breath every autumn waiting for news about the numbers of young among the flocks and the total number of geese that had returned. So much so that sometimes it takes the edge off the true wonder of their return across the dramatic Greenland Ice Cap and two traverses of the ocean from their remote Arctic breeding quarters to their wintering grounds in Britain and Ireland. However, to some sighs

of relief, the count of the global population in spring 2017 came in at 20,556, up by almost 9% on the previous year (18,879; Fox *et al.* 2017). While this gives some signs of a little respite, based on a 9.8% increase at Wexford, 18.5% increase on Islay and 6.9% increase in the rest of Britain, numbers in the rest of Ireland continued to decline by a worrying 12%.

The overall increase was associated with a far more successful reproductive season in the summer of 2016. The percentage young amongst aged flocks in Ireland was 12.5% (based on 3,881 aged), which is low compared to the 1980s and early 1990s, but pretty much double that in the last three winters (6.9% in 2013/14, 6.1% in 2014/15 and 6.0% in 2015/16). This included proud parents at Wexford, who were accompanied by 12.2% young (among 3,439 aged

there), up on 5.8% the previous year and the highest since 1995 (14.8%) excepting 2010 when a mild spring and warm dry summer in Greenland produced 14.7% young. In Britain, the overall production of young was a very encouraging 16.5% (from 6,408 aged), including 18.4% (among 2,380 aged) on Islay where birds seemed to do especially well after the 2016 breeding season. Of 25 flocks with reported age ratios, seven exceeded 20% young amongst their number and 16 more than 15%, which after many years of poor reproductive success is extremely encouraging, especially among the smaller flocks.

We are now confident that the long-term reduction in the annual production of young is the major underlying cause for the decline at Wexford (Weegman *et al.* 2017) and most likely throughout the entire population, based on more detailed analyses currently under way.

Mitch Weegman's thesis results showed that of the first-winter birds caught at Wexford, birds that lived through a series of bad springs bred later than those that experienced a sequence of seasons when environmental conditions in Greenland during spring and summer were more favourable in the run up to their successful reproduction (Weegman *et al.* 2016a). These results showed no effects on clutch size, but it was evident that geese bred earlier when conditions were good and implied that such effects were cumulative and carried over in successive years. In other words, a run of years with poor conditions would have a more profound delaying effect on birds breeding successfully within their lifetime than just one bad year.

We began to think that this cumulative effect may be the cause of the slow bounce back in the population in response to single warm springs. However, in the very mild springs of 2010 and 2016, more adult birds returned with young than for many previous years. Hence, whilst one very good year can sometimes make a difference, it will take more than just one or two good springs and summers in succession before the population really begins to increase. The extraordinarily long parent-offspring bonds that may persist for up to 13 years in this population (Weegman *et al.* 2016b) may also contribute to this effect, although the results from that study showed there was no benefit in terms of better survival or reproductive success associated with staying together with your parent(s) or siblings. We await with great interest to see the results of intensive tracking and accelerometry data of Greenland White-fronted Geese that has been undertaken by Mitch and Ed Burrell on Islay. Hopefully, these will show whether the characteristically poor productivity among Greenland White-fronted Geese (compared to other circumpolar races of the same species) has been due to deferral of nesting attempts (perhaps because of poor condition or inexperience) or due to birds attempting to nest but failing for some reason (such as predation or bad weather conditions).

One fun story from tracking of birds in autumn comes from an adult female bird bearing a GPS logger that was caught at Hvanneyri in west Iceland on 23 September 2017, part of a collaborative project with

Mitch Weegman, who is now based at University of Missouri. This bird and its associates moved to a farm called Leirulækjarsel in Mýrar at around 08.30 on 25 September where they remained until they departed. The bird with the logger left Leirulækjarsel at around 12.00 on 28 October en route for "home" (which eventually turned out to be Wexford, SE Ireland, where it spent the entire winter), but what followed was very surprising. The bird seemed to reach southern Ireland perfectly safely on its way south with no problems, passing over Tramore, Waterford on 29 October 04:26 but seemed not to realise that it was so close to its ultimate goal at Wexford Slobs! It continued onwards for some reason, undertaking a tour of the Channel Islands and Brest in Brittany before turning for (Wexford) home, reaching Tacumshane Lake (on the south coast of County Wexford and a well-known Greenland Whitefront resort as well) around 05:27 the next day! Here, it rested briefly before coming up towards the Slobs, going straight into the North Slob by about 07:20 on 30 October, showing no sign of its French holidays. A similar story can be told of another bird caught at the same catch, bearing collar V3Y. This goose turned up at Marazion Marsh in Cornwall on 1 November and later reappeared at Wexford by 11 November, by which time it was reunited and in the company of all the other birds with which it had been caught in Iceland! Of the three other GPS tagged geese from the same catch, two flew steadily down the east coast of Ireland straight to the Wexford Slobs, whilst the fourth was blown off course after leaving Iceland, did a loop around southeast England before heading back to the same wintering resort, where it also spent the rest of the winter.

Whatever the results from all the telemetry finally show us, it is very clear that it is essential that we continue to monitor the fortunes of this fascinating population to track changes in their reproductive success, survival and population size and distribution. For this, we continue to be heartily grateful to the wonderful network of counters and observers that loyally give of their time so that we can follow the variable fortunes of these amazing birds.

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Breeding success of Dark-bellied Brent Geese in Britain, 2017/18

Kane Brides

Similar to other Russian breeding species, the Dark-bellied Brent Goose experienced a very poor breeding season during 2017. Age assessments carried out at eleven estuaries or coastal sites in Britain showed that of the 42,706 geese assessed, just 409 (1.0%) were young birds; and of the 157 broods recorded, the mean brood size was 1.91 young per successful pair (Figure 1).

The percentage of young wintering in Britain during the last three years has remained below 10% and the population appears to have skipped a good breeding

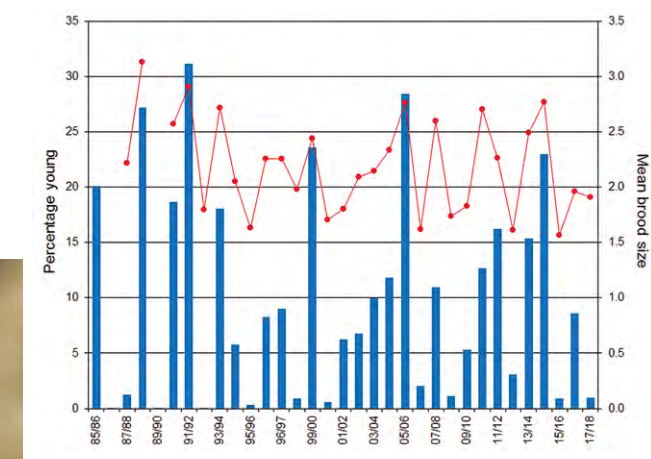


Figure 1. The percentage young (%) and mean brood size of Dark-bellied Brent Geese in Britain, 1985/86–2017/18.

season, which is usually expected with the three-yearly cycle of lemming and predator abundance that greatly influences Dark-bellied Brent Goose breeding success.

Reports from monitoring stations in the breeding grounds in Arctic Russia suggest that weather conditions were far from suitable during 2017, with the air temperature in May being lower than the average for the last 38 years, and in June for the last 15 years. A combination of poor weather during the incubation and early gosling rearing stages and prolonged spells of snow reported for the whole of June is likely to be the main contributing reason why the geese experienced such a poor breeding season.

The winter season of 2017/18 marked the 33rd consecutive year in which annual age assessments for Dark-bellied Brent Geese have been collected by experienced volunteers in Britain. As always our thanks go to the network of dedicated GSMP volunteers for their valuable support.

Photo: Mike Dawson



Yet another poor breeding year for European Whitefronts

Kees Koffijberg & Kane Brides

Age ratio counts of European White-fronted Geese carried out during winter 2017/18 revealed only 7.3% young birds amongst flocks observed in Germany, The Netherlands, Belgium and the UK. Although at the time of writing, data were still being received, the preliminary sample of 171,000 aged individuals gives little reason that this figure will change significantly when the dataset is completed.

The percentage of young was similar between Germany (7.1%) and The Netherlands (8.4%), but slightly higher in Flanders/Belgium (13.0%) and UK (10.8%): a typical pattern which has been observed in previous years. Overall, a sample of 2,653 broods was also assessed resulting in a mean brood size of 1.37 young per successful pair - mainly based on samples taken on the Lower Rhine in Germany. As per the percentage young, this figure sits at the lower end of the scale of brood sizes reported so far for this Whitefront population.

In the UK, the breeding success of European Whitefronts was assessed at North Warren (Suffolk) and in Lincolnshire at Gibraltar Point and Elm House Farm in January and at WWT Slimbridge in February. Overall, 314 birds were aged and the resulting percentage of young birds (10.8%) was well below the previous ten-year mean (23.8%) and the lowest recorded since 2004/05, reflecting what was seen for the population as a whole.

2017 was clearly another poor breeding year for the Whitefronts, and even worse than the already low breeding success recorded for the population in 2016/17 (12.4%). Several expedition reports from the



Photo: James Lees / WWT

Russian Arctic suggest that the birds experienced an extraordinarily cold spring/summer in 2017 and as a result were delayed in breeding.

The percentage of young birds in 2017/18 was, in fact, among the lowest ever recorded since the early 1960s. It confirms the long-term and ongoing decline in the reproduction rate since the early 1990s (see

Figure 2): only data from the Netherlands, where large numbers of Whitefronts concentrate, are used to assess the long-term trend; however the results are thought to be representative of the flyway as a whole.

Our sincere thanks go to all the observers throughout the flyway for their submission of data and continued support.

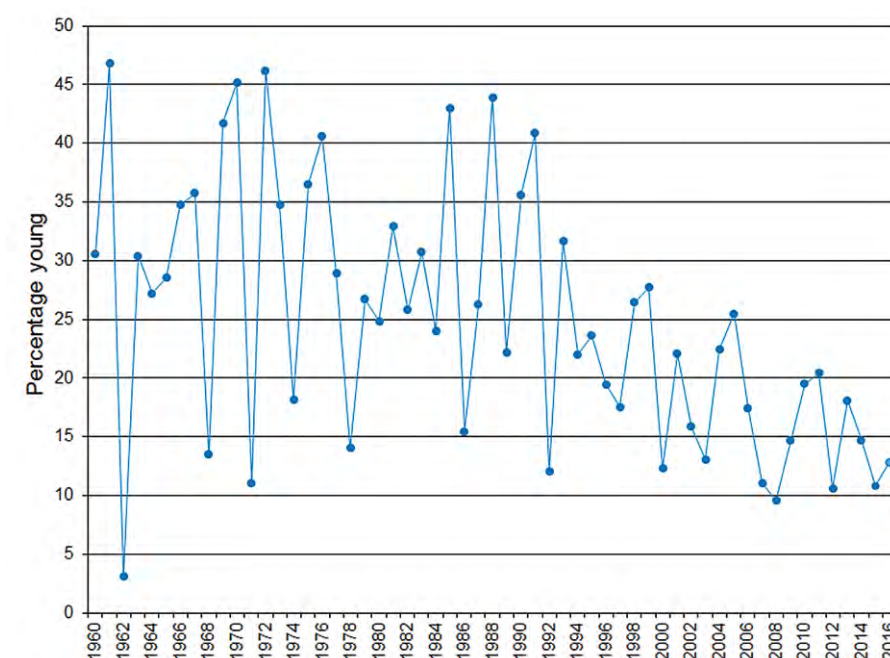


Figure 2. The percentage young of the European White-fronted Goose population in the Netherlands, 1960–2017 (the open circles represent incomplete data). Data provided by Sovon Vogelonderzoek Nederland.



Aerial photograph of
Greenland Barnacle Geese
Photo: Carl Mitchell / WWT

Greenland Barnacle Geese, 2017/18

Carl Mitchell

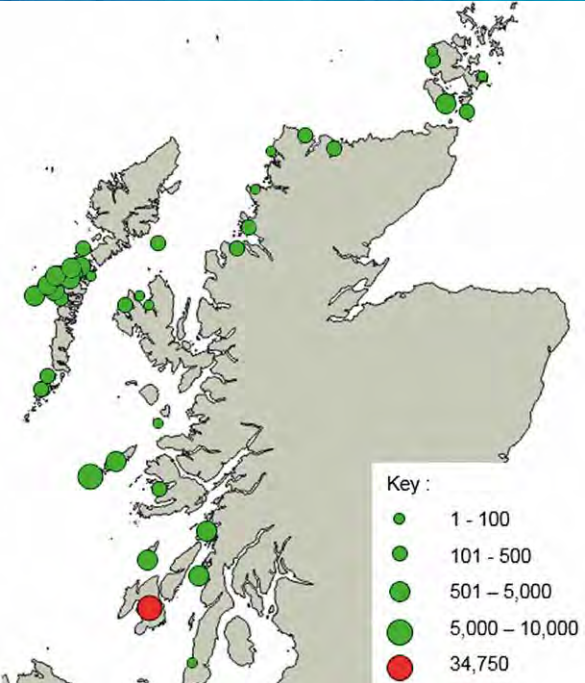


Figure 3. The distribution of Greenland Barnacle Geese in Scotland recorded during the mid-March 2018 international census.

In March 2018, the most recent flyway-wide census of Greenland Barnacle Geese took place in Scotland and Ireland, including those parts of the winter range that need to be checked using a light aircraft. The population estimate was 72,162 a 10.5% decrease on the last complete census conducted in 2013 (80,670). In Ireland, 16,237 birds were counted, a decrease of 7.2% since 2013. In Scotland, 228 sites were surveyed, including 190 islands by aerial census, and Barnacle Geese were found at 39 sites (Figure 3). A total of 55,424 birds were counted and an estimate of 501 birds were included from one site giving a total of 55,925 birds, a decrease of 11.5% since 2013. Islay was the most important site with 34,750 birds counted – 22.6% lower

than the number recorded there five years previously. Compared to 2013, there were increases in numbers in areas surrounding Islay; numbers on Tiree and Coll increased by 17.8% to 6,477 and on North Uist (mainland), numbers increased by 68.9% to 5,950. It is interesting to speculate whether the recent increase in shooting and disturbance of Barnacle Geese on Islay as part of the pilot management programme has displaced some birds to nearby winter grounds. On Islay, the most important wintering site in the UK for Greenland Barnacle Geese, four coordinated counts were undertaken during winter 2017/18. These revealed 48,366 birds in November, 43,351 in December, 37,487 in January and 34,750 in March.

The mean of these four counts was 40,989 birds which represents a 12.2% decrease compared to the winter 2016/17 mean (46,714 geese). The November 2017 count was 5,000 birds higher than the count a month later and 13,600 higher than the March 2018 count. The November count presumably included transient geese that did not stay to winter on Islay and, in addition, SNH shot 3,321 birds there during the winter (see also *GooseNews* 14:10–11). Breeding success is measured annually on Islay and counts in autumn 2017 revealed a poor breeding season. Just over 9,000 birds were aged of which 5.3% were young birds, with a mean brood size of 1.92 young per successful pair. For seven out of the last ten

years, breeding success amongst the Islay flock has been below 10% young. On Tiree, a sample of 300 birds held 3.3% young, with a mean brood size of 1.11 young per successful pair. Thanks go to Malcolm Ogilvie and John Bowler for providing age counts and to Alyn Walsh and David Tierney (both National Parks and Wildlife Service) for providing census count data from Ireland. Special thanks are also extended to all those who helped with ground counts during the census. A complete census report will be made available in due course at <http://monitoring.wwt.org.uk/our-work/uk-waterbirds/goose-swan-monitoring-programme/reports-newsletter/>.



Svalbard Barnacle Geese in 2017/18

Larry Griffin

Finally it feels as though we had a winter that challenged the geese a bit in terms of temperatures and food availability, especially in the second half. After December it got fairly cold, and even into March and early April there were some days of lying snow – fairly rare on the Solway plains. This meant the geese actually looked rather thin in the first half of April as the migration period approached. However, within a matter of days of feeding avidly on the rapidly greening saltmarsh, as the majority tend to do throughout April and May, their abdominal profiles swelled noticeably and they were soon leaving the banks of the River Nith near Dumfries and the more westerly resorts, for Caerlaverock and then funnelling east onto Rockcliffe Marsh, Cumbria, ready for departure.

This year, through a contract with EDF Energy Renewables Limited (managed by Arcus Consultancy Services Limited), it has been possible to catch and track eight female Barnacle Geese on this flyway. Although similar work was carried out from 2006–2012 in order to elucidate unknown parts of their international flyway, this was the first time WWT have tracked females. This was an exciting development made possible by the massive reduction in weight of the tags and by the internalising of the antennae within the tags. The weight of the tags was now less than 30g, approximately 1.5% of body weight, whereas before it was typically about 45–60g. The tagging work was funded by EDF so that we could check on how the birds have responded to the Beck Burn wind farm now in operation near Longtown, Cumbria, ~3km from the main gathering and departure point for 99% of the

Svalbard Barnacle Goose population at Rockcliffe Marsh. Funding for the project will also aid research into broader goose ecology and habitat use in response to climate change, breeding propensity and success and their international migratory paths and timings.

With live data from the tags coupled with up-to-date census counts on the ground, it was possible to monitor mass departure events and the extent to which flocks might have traversed the nine turbine wind farm site and its environs, with the tagged birds acting as markers. With recent advances in tag technology and more efficient batteries and solar panels it was possible to get GPS fixes at incredibly fine rates, down to ~30 seconds compared to the hourly rates of the past tracking work! It was also possible to add further detail through GPS bursts, which allow for GPS fixes every second for 10–20 second bursts, and on two of the tags it was also possible to collect tri-axial acceleration data alongside these fixes which basically allow us to know what the bird was up to in terms of behaviours such as feeding or walking *etc.*

These data generate beautifully detailed tracks for the migration from the Solway to Svalbard, and there are a couple of cases where we were able to track a goose every two minutes or less for the full 1,000 mile journey from Caerlaverock to Helgeland in Norway (Figure 4). The mass of data also contains information

Figure 4. Two of the finely detailed GPS tracks (two minute GPS fixes and some ten minute periods along Norway coast) of female Svalbard Barnacle Geese migrating from the Solway to Vesterålen in May 2018; part of a tracking study of eight birds.

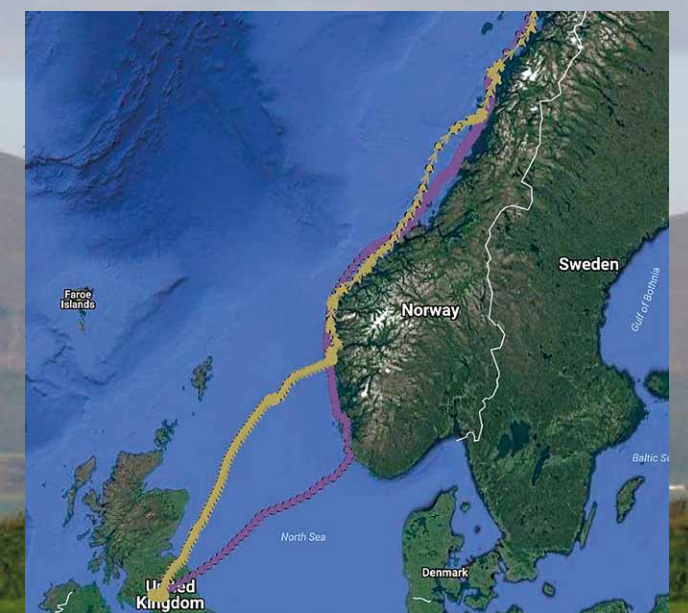


Photo: WWT

on the speed and height of the bird. The only down side to these tags compared to the previous ones is that they rely on a mobile phone connection (GSM network) to send their data. The old tags were true satellite tags that could send their data from anywhere in the world; the current batch rely on mobile phone providers and we know how patchy that can be in rural locations! Even so, it has been remarkable to see just how often the birds “phoned home” from remote little skerries off the coast of Norway – often as they were pursued by Paul Shimmings in his 30th year of counting and ring reading – indeed, they seemed to have a much better connection than I get in peripheral areas of Dumfries. Three of the birds have even sent texts from Svalbard, one near Barentsburg, one near Sveagruva and another from Prins Karl Forland where I can see as I write this in the first week of June that it has just settled on an island to breed. Amazing...the autobiography of a goose.

In making the two late cannon-net catches of nine (12 April) and 16 birds (19 April) with a half-net at Caerlaverock in order to deploy these tags, it was possible to colour ring the other birds netted (three letter orange “FP-“ and “FS-“ series rings) and deploy a further six neck collars on some of the adult males. As mentioned in last year’s *GooseNews* article, we really appreciate any reports of these “rare” birds among the 42,600 (the adopted Solway population total for winter 2017/18) and there are now up to 14 collared birds out there in the population.

Remarkably, collared pair “D” and “I” were again photographed on Vesterålen, this time on 23 May, just three days later than last year – they were first collared at Caerlaverock in April 2016 and so this represents their third migration through that area of northern coastal Norway since collaring. Also rather brilliantly, considering they are black collars with a small white letter on black necks, collar “N” was spotted among 11,000 birds on 8 October at Lindisfarne after a mass autumn arrival – over 1,500 of which lingered in the Budle Bay area of Northumberland until the end of February providing a brilliant goose watching spectacle throughout the winter as they mixed with Brents, Pinks, Greylags and Canadas, with a couple of leucistic birds providing the icing on the cake. Collar “N” was later reported from the Southernness area of the Solway on 25 January, one mile from where it was ringed in March 2017.

Many thanks to the Solway census team including Lana Blakely, Mike Carrier, David Charnock, Rowena Flavelle, Jonathan Foot, Bob Jones, Dave Long, Mhairi MacLaughlan, Marian & Dave Rochester and Paul Tarling and to Derek Forshaw for observations from Budle Bay. Thanks also to Rosie Rutherford, Brian Henderson and Val & Bob Smith for sterling efforts with the ring reading again this winter and to all others providing updates along the flyway but especially Johnny Bakken and Ben Steel. John Allsopp, ecologist at Arcus Consultancy Services Ltd, facilitated the tracking work which was appreciated.

British Greylag Geese in Scotland, 2017/18

Carl Mitchell

Areas where Scottish Natural Heritage are now controlling the numbers of British Greylag Geese, in an attempt to alleviate serious agricultural damage, are monitored and provide the basis for annual reporting. However, no count or assessment of productivity was undertaken on Orkney in 2017. Between 2012 to 2016, c.20,000 to c.24,500 British Greylag Geese have been counted there, suggesting that the rapid increases in numbers up to 2012 has stopped and that, due to increased shooting of the summering stock, the population trend has largely stabilised.

On Tiree, the late August count was 2,039 geese, a 13.5% decrease compared to 2016. Breeding success was once again high with 1,810 birds aged and, of these, 37.6% were young with a mean brood size of 2.45 per successful pair. This was the twelfth year in a row that breeding success was over 25% young. On the Uists, 5,286 Greylag Geese were counted in September 2017, a decrease of 20.4% on the previous year, and 4,892 birds were counted in February 2018, a decrease of 1.3% on the previous year. No age counts were carried out on the Outer Hebrides.



Photo: Mike Dawson

Thanks to John Bowler (RSPB Scotland) for providing data from Tiree and to SNH for providing data from the Uists.

Capture and marking round-up

Kane Brides, Paul Roper & Graham McElwaine

Here, we provide a round-up of some of the projects being undertaken by various organisations and individuals that involve the capture and marking of the UK’s goose and swan populations.

Bewick’s and Whooper Swans

The marking of Bewick’s and Whooper Swans with colour-rings forms part of WWT’s long-term study of these species, with re-sightings of ringed swans enabling researchers to gain further information on the movements, site fidelity, breeding success and survival of individual birds.

In August 2017, a team from WWT and University College London (UCL) joined Russian colleagues on an expedition to the Russian tundra to catch Bewick’s Swans. Over nine days, the team travelled by boat to areas frequented by the Bewick’s, specifically targeting non-breeding pairs and flocks. In total, 86 swans were captured and colour-marked with yellow or white leg

rings. Each bird also had various body size measurements taken to assess its health and condition. A smaller number of Whooper and Mute Swans were also ringed; unlike the Bewick’s Swans, these birds belong to populations that do not migrate to the UK, but will likely winter in the Baltic States, Netherlands and Germany.

As part of the ongoing work to explore possible reasons behind the decline of Bewick’s Swan, WWT and UCL scientists took sediment cores and water quality samples from several lakes and ponds used by the swans in the region. These samples will be analysed to assess any changes in habitat and food supply for the swans in relation to variation in climate over time.

The expedition would not have been possible without the help and active participation of Russian colleagues from the Nenetskiy Nature Reserve, who have been protecting this important breeding and moulting area for the swans and many other waterbird species since the area was designated as a National Nature Reserve

Photo: Ben Cherry / WWT



(known as a “zapovednik”) by the Russian Government in 1997.

Back in the UK, the Bewick's Swan is becoming an increasingly difficult species to catch. Two cannon-netting attempts on the Ouse and Nene Washes during the winter months failed to catch any birds; however, a swan pipe catch at WWT Slimbridge in January 2018 caught ten, which were all ringed and screened by x-ray to check for gun shot, with one bird found to be carrying a shotgun pellet in the neck.

Catches of Whooper Swans, on the other hand, were much more successful. Over the winter, three swan pipe catches took place at WWT Welney in Norfolk, WWT Martin Mere in Lancashire and WWT Caerlaverock in Dumfriesshire. In total 134 Whoopers were caught which included 95 newly ringed birds and 39 recaptures.

During winter 2017/18, 5,750 ring sightings of 473 individual Whoopers were reported to WWT. These sightings were added to the ever increasing database, which now holds an incredible 951,709 records, with the first record from 1985. Whilst we are used to entering sightings of Whooper Swans from their usual wintering haunts in the UK, we were surprised to receive sightings of three Icelandic ringed Whoopers (Orange ZTB, ZTD and ZTF) from the Netherlands. The family unit consisted of a parent (ZTB) and two cygnets from the 2015 breeding season, which had been ringed at Hrappsstadaselstjorn in north Iceland. The family unit appear to have spent the winter together in the Friesland area in the Netherlands.

Any sightings of colour-marked Whooper or Bewick's Swans can be reported to colourmarkedwildfowl@wwt.org.uk.

Pink-footed Geese

Work being carried out by WWT's Research Unit to track Pink-footed Geese in relation to offshore wind farms, with the support of Ørsted, has again led to an increase in catch effort for this species during winter 2017/18. Two catches, both at WWT Martin Mere in Lancashire, yielded a total of 87 birds: 26 in October 2017 and 61 in March 2018. A number of these birds were also tagged with GPS tracking devices. For more on this story, see the article on page 28.

A new study being carried out by Hull University, looking into the migratory routes of Pinkfeet wintering in eastern England, began in January 2018. As part of this work, a cannon-net catch took place in north Norfolk that resulted in a catch of 59 Pink-footed Geese.

Please report any sightings of Pink-footed Geese marked with a white or orange leg ring, or a grey collar to colourmarkedwildfowl@wwt.org.uk

Greenland White-fronted Geese

Attempts to cannon-net Greenland White-fronted Geese on Islay proved fruitful with two catches by WWT's Research Unit in February 2018 yielding 33 geese, of which 31 were new birds and two were recaptures. Seven Greenland Barnacle Geese were also caught as part of these catches.



The Whitefronts are being ringed as part of a study that is looking into, amongst other things, the population dynamics of different flocks and links with the overall population. The geese have been marked with white leg rings and orange neck collars, which have three black characters.

If you spot a Greenland White-fronted Goose with a white leg ring and/or an orange neck collar, please report your sighting at <http://greenlandwhitefront.org/>.

Dark-bellied Brent Geese

After 34 years of operating on landfill sites in London, Hertfordshire and Essex catching gulls, the North Thames Gull Group has taken its last catch of gulls. After some internal discussions and tentative links with Essex Wildlife Trust, it was decided to look at the feasibility of moving the group to study Dark-bellied Brent Geese, and so a new group called the Southern Colour Ringing Group (SCRG) was launched.

The Brent Goose project is going to become the ringing group's primary project, as Dark-bellied Brent Geese are icons of Essex. As Dark-bellied Brent Geese rely on so few wintering grounds, the species is on the Amber list in the UK's Birds of Conservation Concern. Over the winter of 2017/18, a partnership project between Essex Wildlife Trust and the SCRG worked at Blue House Farm nature reserve, on the River Crouch Estuary, to try and catch the geese.

SCRG spent much of the winter working out how to catch Brent Geese and learned a lot from watching and studying the birds without catching any. With the help of local birdwatcher and Brent Goose expert David Low, they worked over several sessions to make a catch. On 27 January, a single catch of 18 birds was taken, all of which were ringed with a metal ring and a single green colour-ring with a two-digit white code. The geese were also weighed and measured prior to release in a single flock.

In the weeks after the catch, David Low was out looking for the marked birds and so far has managed to locate all but three of those that were ringed. This is a fantastic effort and whilst most sightings have been at Blue House Farm, we have also discovered the birds split up in the flocks and move widely around the

Crouch Estuary at Deal Hall and South Woodham – probably displaying behaviours we don't yet understand.

As the geese started to migrate, we received a few interesting reports of some of the birds being seen in the Netherlands and Germany. We were absolutely delighted that 17 of the 18 geese ringed have been re-sighted at least once since release.

Over the next few winters, we hope to re-invigorate the colour-marking of Dark-bellied Brent Geese in Essex, which initially started in the early 1970s and thus start piecing together some of the behaviours of the goose flocks on the Essex coast, which will contribute new towards information to inform conservation actions for this species.

Any sightings of Dark-bellied Brent Geese with a green leg ring can be submitted to the SCRG using their online recording form at <http://www.southern-colour-ringing-group.org.uk/index.php/report-a-sighting>.

Canadian Light-bellied Brent Geese

The ringing season commenced with the first ever catch on the Great Britain mainland, at the Menai Straits in Wales, in late January. The catch was undertaken by the SCAN Ringing Group, and targeted a GPS bird, only to learn that the GPS tag had fallen off just before. In total, 15 geese were caught.

For the first time in some years, no attempt was made to catch in the Dublin area, and all Irish catches were in Northern Ireland. The continuing effort at Dundrum, Co. Down, yielded 98 birds (caught in three catches), including the all-important replacement of

some rings which were over ten years old. A late catch in April 2018 of 21 geese on Lough Foyle was a first for the site and became the most northerly catch ever in Ireland.

On to the staging grounds in Iceland in May, where a joint team from University of Exeter, the Irish Brent Goose Research Group (IBGRG) and Icelandic colleagues caught a further 128 geese in six catches. This included the first ever catch of 26 birds from the Myrar region, where geese are difficult to find, let alone catch.

At the time of writing, with large numbers of records yet to be entered, sightings of marked Canadian Light-bellied Brent Geese during the 2017/18 winter/spring period stood at 10,930 records of 1,452 individuals, received from 184 observers along the flyway. For the second year in a row, one of the marked geese (but not the same one!) was recorded this spring from the Faeroe Islands. A regular team from IBGRG visited Iceland to augment the annual ring-reading effort there during the recent spring staging.

Many thanks go to the cannon-netters and to all the support teams of volunteer helpers and ring-readers in Ireland, Iceland, France, UK and elsewhere.

Please report any sightings of Light-bellied Brent Geese with two leg rings (varying colours, each engraved with one letter) to Graham McElwaine (grahammcelwaine@btinternet.com).

Further information on how to submit sightings of colour-marked geese and swans can be found on page 5.

Releasing the Canadian Light-bellied Brent Geese after the catch at Loch Foyle

Photo: Graham McElwaine



Conservation and research news

Update on GPS-tagging of Pink-footed Geese

Carl Mitchell, Larry Griffin, Geoff Hilton & Kevin Wood

With the support of Ørsted (a renewable energy company), WWT has begun a study that will tell us more about the impact of wind farms on a wildfowl population. The knowledge gained will enable us to assess the cumulative collision risk posed to Pink-footed Geese in Britain by both onshore and offshore wind turbines, and, in particular, understand how often these birds pass across wind farms, such as those in the eastern Irish Sea. We have used Global Positioning System (GPS) tags to study the birds' annual migration routes (Figure 5), their daily movements between roosts and feeding areas, and their seasonal movements within Britain.

The first nine Pink-footed Geese were caught and marked in southwest Lancashire in December 2016. Subsequent catches were made in Dumfriesshire in January 2017 (five birds marked) and in March 2017 (ten birds); 22 birds were marked during the summer moult in Iceland, eight were caught in south west Lancashire in October 2017 and 13 were also marked



Photo: Mike Dawson

there in March 2018, bringing the total marked to 67 geese. Whilst the capture and marking part of the study is complete, the tags will hopefully continue to provide unique insights into the movements of the marked geese for years to come.

Immediately after release, the tagged geese quickly began to show us how mobile they were and revealed insights into their daily foraging behaviour, including the locations of, and flight routes to, fields where they fed. Over time, we began to learn the routes the geese took between sites within Britain and, importantly, the height at which they were flying. The geese proved to be highly mobile within a general and well-established pattern - a large proportion of Pink-footed Geese arrive in Scotland in the autumn, then move south using a series of major roosts to winter in Lancashire and Norfolk, before heading back through Scotland on spring migration. The move north back to Scotland can start as early as mid-January for some Pinkfeet. Movements between roosts and associated feeding areas has revealed much about their use of the suite of Special Protection Area (SPA) roost sites, which are designated specifically for this species.

We are also beginning to obtain detailed data on between-winter site fidelity. For example, of the geese tagged in winter 2016/17, of those that survived, fewer than half returned to the same county to winter in 2017/18. Yet, we know from the telemetry data and from sightings of individually marked birds, that others are highly site faithful, returning to the same field year after year. This suggests that whilst the broad distribution of Pink-footed Geese within Britain is very similar between winters, where individual geese choose to winter, within that range, varies.

Whilst the study focusses on movements within

Britain, the tags have also provided remarkable data on the movements and locations of the geese on their summer quarters. Of the 24 geese marked in winter 2016/17, nine migrated to east Greenland either to moult or breed. Five of these summered above 80°N, including one that moulted in north Peary Land (83°N) – there is simply no more land north of this area (see also *GooseNews* 15: 6–7). In addition, the tags have provided information on breeding locations and outcomes. Tags that are stationary for about a month from early May indicate females sitting on eggs.

The GPS data are made available through SMS (text) messages; however, the GPS tags store additional data, for example flight heights, which can only be accessed via a hand-held receiver. This involves locating tagged geese either on roosts or in fields and, once contact has been obtained, waiting patiently for the data to download. This has involved much crawling down ditches, scrambling over dry-stone walls and hiding in gorse bushes to get close enough to the geese without disturbing them!

We eagerly await news of the summering locations of the geese and mapping their return migration back to Britain in autumn 2018. Then, the work begins. Marking the geese and collating the GPS data has, so far, proved relatively straightforward (despite the gorse bushes and long days in the field). Making sense of the masses of data from 67 tagged geese will involve complex individual-based modelling techniques. Expect a further update on progress in a future *GooseNews*.

The location of the tagged geese can be followed at this website:

<https://sites.google.com/view/telemetry/home>



Photo: Philippa Mitchell

Carl Mitchell using an aerial to download GPS data from a tagged Pink-footed Goose near Grantown-on-Spey, Morayshire.



Figure 5. Spring migration routes of GPS-tagged Pink-footed Geese marked in Britain (note that some routes appear straighter and more direct than that flown by individual geese due to fewer fixes, with up to 24 hours between successive fixes in some cases).

AEWA's European Goose Management Platform – an update on progress with the development of sustainable goose management

Richard Hearn

Since the initiation of the AEWA¹ European Goose Management Platform in 2016 (as reported in *GooseNews* 15 and 16), significant progress has been made with the implementation of the plans for managing and conserving Svalbard Pink-footed Goose and Taiga Bean Goose, and the development of management plans for the Northwest European Greylag Goose population, which does not frequent the UK, and all three populations of Barnacle Goose, two of which (Svalbard and Greenland) winter exclusively or predominantly in the UK.

At the most recent meeting, held in June 2018 in Leeuwarden, The Netherlands, the second workshop

for the development of management plans for Barnacle Goose and Greylag Goose took place, along with the third meeting of the European Goose Management International Working Group, during which progress with the implementation of the Svalbard Pink-footed Goose and Taiga Bean Goose plans was reported and international harvest quotas for these populations agreed for next winter.

Active management of Svalbard Pinkfeet has been in place since 2012, aiming to maintain population size at around 70,000 birds through the regulation of hunting bag size according to the latest estimates of population size and other factors. In recent years, this has largely

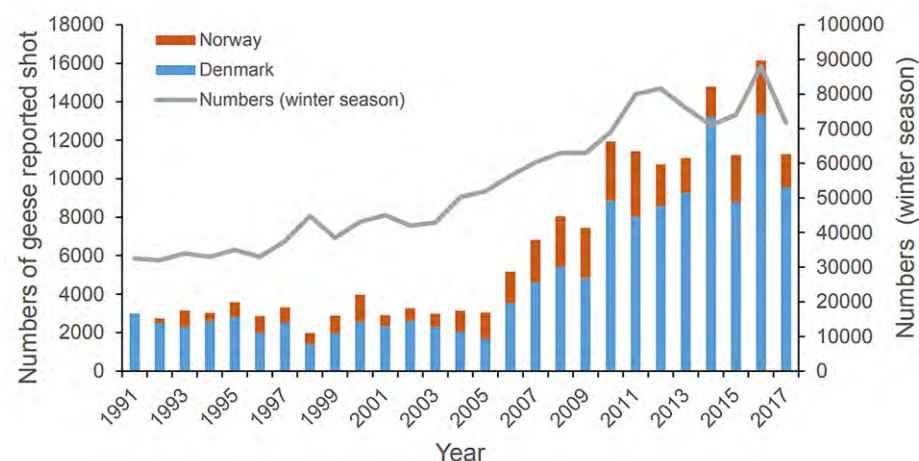


Figure 6. Development in the harvest of Pink-footed Geese in Norway and Denmark, 1990/91–2017/18. Grey line shows development of the size of the Svalbard population of the Pink-footed Goose in the corresponding years. Reproduced from Madsen *et al.* 2018².

brought about a stabilisation in numbers, with larger bags following years of higher abundance (Figure 6). As a result, this process is helping to reduce the population growth rate and the level of conflict at spring staging areas in Norway.

Similar approaches are being developed for Northwest European Greylag Goose and all populations of Barnacle Goose; the current draft management plans are being finalised and will be submitted to AEWA Parties for adoption at the forthcoming Meeting of Parties in December 2018. These plans provide a generic framework and set out the conditions which must be met by any future management actions, including shooting under derogation for Barnacle Geese, or for establishing harvest levels for Greylag Geese. The implementation of the more difficult aspects, such as setting of target population sizes, will take place at the next phase, not earlier than mid-2019.

The Taiga Bean Goose Action Plan takes a similar adaptive approach to the management of hunting, but operates under a very different framework since the primary objective is to recover this depleted population rather than reduce population growth (in order to reduce agricultural damage and other human conflicts). Thus, the target

population size is larger than the current population and so any continued hunting is set at a level that does not compromise the long-term recovery of the population. The UK population is part of the Western Management unit (sub-population), which now numbers fewer than 1,000 individuals. The goal for this Management unit is a population of 5,000–10,000 individuals and it is therefore a high priority for conservation. Numbers in the UK are also in decline (see page 15) and it is now one of our most threatened birds. Of particular note is the small group in the Yare Marshes, which is on the edge of disappearing altogether. Greater focus on the causes of decline and remedial action is needed.

The conservation and sustainable management of European geese faces a number of significant challenges in the years ahead, but the EGM has made excellent progress towards this and now provides a sound platform for effective action in future.

Further information related to the EGM IWG can be found at <http://egmp.aewa.info>.

Footnotes

- 1 African-Eurasian Migratory Waterbird Agreement <http://www.unep-aewa.org/>
- 2 Available at: http://www.unep-aewa.org/sites/default/files/document/AEWA_EGM_IWG_3_8_Pinkfoot%20Population%20status%20report%202017%202018_formatted_final.pdf

Photo: Robert Newlin



Photo: Richard Taylor-Jones / WWF

The 6th International Swan Symposium



The 6th international symposium of the Wetlands International / IUCN SSC Swan Specialist Group will be held at the Estonian University of Life Sciences, Tartu, Estonia, from 16–19 October 2018.

At the time of writing, the programme is still in development, but topics for presentations and discussions will cover many aspects of swan biology, ecology and conservation: including, habitat use and site selection, foraging ecology, population trends and dynamics, migration and movements, breeding biology and the outcome of conservation initiatives. The week's event will also include a mid-conference excursion to Lake Peipsi, which lies on the border between Estonia and Russia, followed by a conference dinner. There will also be a one-day workshop on the implementation of the AEWA Single Species Action Plan for the Northwest European Bewick's Swan population, probably on the last day of the meeting. A post-conference excursion to Estonia's wetlands is also being planned.

If you are interested in attending, the deadline for registration is 1 October 2018 (280€ full package, includes lunches, mid-conference excursion and conference dinner). One day passes are also available at 70€ (includes lunch). The post-conference excursion will cover three days at a cost of 180€ (includes accommodation and catering).

For further information, please go to <http://conference.emu.ee/conferences/swan2018/>.

The 18th Goose Specialist Group Conference

The 18th conference of the Wetlands International / IUCN SSC Goose Specialist Group (GSG) was held in Klaipeda, Lithuania in March 2018, bringing together 102 participants from 22 countries across Europe, Asia and North America. The weeklong event provided a friendly and relaxed environment that enabled people from all aspects of goose (and in some instances swan) conservation and research to come together to share knowledge, discuss issues and swap ideas; or to perhaps just sit and listen to the enlightening talks, wander round the poster display and catch-up with old friends and colleagues.

Topics for presentations included goose population status, reproduction and migration ecology, disease, and the impacts of global change and anthropogenic activities.

Midway through the conference, attendees were treated to a field trip to the Nemunas River floodplains, one of the most important staging areas for geese (predominately Greater Whitefronts) on migration to the Russian Arctic, and to the bird ringing station in Ventės Ragas, which was first established in 1929 and sees 100s of thousands of migratory birds pass through every year.

An overview of the conference has been published in the May 2018 issue of Goose Bulletin (the bulletin of the GSG), which will be made available on the GSG website (<http://www.geese.org/gsg/>). The conference programme and abstracts can be found on <http://apc.ku.lt/geese/>.

The next conference will be held in 2020 in The Netherlands.

The GSMP partnership

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

The members of the GSMP Steering Group in 2017/18 were Colette Hall (WWT), Richard Hearn (WWT), Anna Robinson (JNCC), David Stroud (JNCC) and Simon Cohen (SNH).

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Photo: James Lees / WWT

Information in *GooseNews* is compiled from a variety of sources and does not necessarily reflect the views of WWT, JNCC or SNH.

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

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