

The newsletter of the Goose & Swan Monitoring Programme

goose news

ISSUE No. 14 | AUTUMN 2015

Brent Goose expedition to the Canadian Arctic

**An update on the Islay sustainable
goose management strategy**

Bewick's Swans: a new hope

GSMP Counters' Conference 2014

IGC and age assessments now online

Latest news from GSMP surveys



Editorial

This edition of *GooseNews* contains up-to-date information on the status of migratory swans and geese in the UK, together with articles on project updates and goose management in Scotland. In a global context, the UK supports a high diversity of wintering geese and swans and the long-term fortunes of our wildfowl change over time. We report on increasing numbers for some populations and these can be regarded as conservation successes following the depletion of numbers in the early part of the last century.

There has probably never been so many Pink-footed Geese or Whooper Swans wintering in the UK. Some populations that have increased in number can cause localised damage to agricultural economic interests. In Scotland, Scottish Natural Heritage are managing populations by increasing over winter mortality through shooting. In the case of Barnacle Geese, both the Greenland and Svalbard populations are subject to regulated shooting, though both populations are protected through European wildlife laws. This has led to increasing tension between conservation bodies and the government agencies. Rae McKenzie's article (page 10) provides information on the management plan for Barnacle Geese on Islay for the next ten years.

Some populations are decreasing. These include Taiga Bean Geese and Bewick's Swans, both of which are decreasing at the flyway level. Kevin Wood's report (page 12) outlines the efforts underway to halt the decrease of Bewick's Swans. Data provided to the Goose & Swan Monitoring Programme has proved vital in our understanding of the population dynamics of both those populations that are in conflict with agricultural economic interests and those that are declining.

We thank you all for your contributions. We are also very appreciative of any articles/reports that you wish to submit to *GooseNews* and please also feel free to provide feedback on the content.

Carl Mitchell

‘ Data provided to the Goose & Swan Monitoring Programme has proved vital in our understanding of population dynamics ’

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Photo: James Lees / WWF

Survey dates for 2015/16

Icelandic-breeding Goose Census

The following dates were chosen for coordinated counts in autumn 2015:

Pink-footed Goose: 17/18 October and 14/15 November 2015

Iceland Greylag Goose: 14/15 November 2015

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

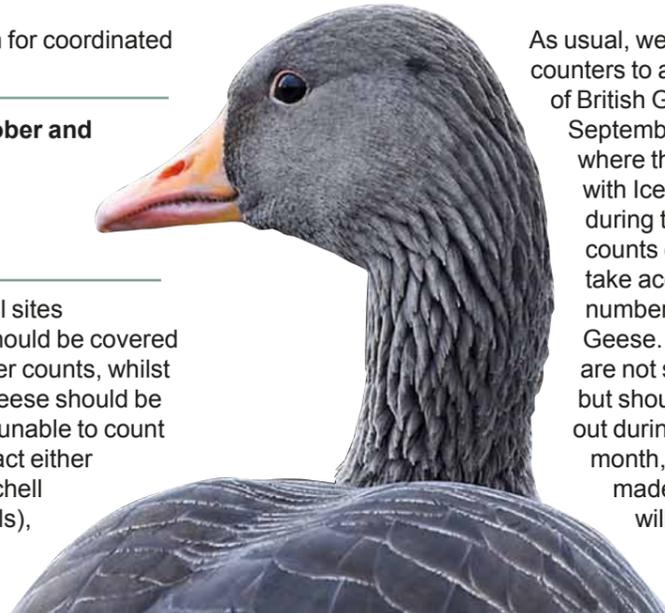


Photo: Paul Marshall / WWT

As usual, we encourage all counters to also carry out a count of British Greylag Geese during September at those sites where they occur together with Iceland Greylag Geese during the winter so that IGC counts can be adjusted to take account of the likely number of British Greylag Geese. September counts are not strictly coordinated but should ideally be carried out during the middle of that month, although any counts made during September will be of value.

Greenland White-fronted Goose Census

The coordinated international census dates for 2015/16 are:

12–16 December 2015 and 12–16 March 2016

Other preferential dates for local site monitoring are:

14–18 November 2015, 16–20 January 2016, 13–17 February 2016 and 27 February–2 March 2016.

These monthly counts help identify any major changes in wintering phenology and/or between site interchange. 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.



Photo: Ed Burrell

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/goose-swan-monitoring-programme/>, 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/>.

National goose and swan age assessments

Age assessments will continue as usual during 2015/16. The survey periods vary between populations and are shown below.

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	

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 colourmarkedbirds@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/goose-swan-monitoring-programme/colour-marking/>.



Photo: WWT

Enter your IGC and age assessment counts online!

A new online system 'WWT Waterbird Monitoring Online' is now available for submitting counts from the Icelandic-breeding Goose Census and National goose and swan age assessments (see page 15 for further details).

Counters can register to use the system at <http://monitoring.wwt.org.uk/recording/> and help pages are available on the site. If you need any further information or guidance on how to use the site, please contact Steve Roe (see back page for contact details).



An expedition to the High Arctic breeding grounds of Canadian Light-bellied Brent Geese

Kerry Mackie

Twenty years of counting and catching Light-bellied Brent Geese in Ireland has led to occasional forays to Iceland in spring, but an opportunity to follow their migration to the upper reaches of the planet is not one to be sneezed at.

Yes, I always hoped a chance might come along, but with work and family commitments, would I be in a position to actually go? Expeditions to the Canadian High Arctic to study Brent Geese have been few and far between. Oil exploration in the Inverup Basin in the early 1970s prompted the Canadian Wildlife Service (CWS) to start a ringing (banding) program on the fringing islands of Axel Heiberg, Ellesmere, Bathurst and Melville which led to the surprise discovery that some High Arctic Canadian Brent Geese were migrating to Europe.

Micheál O'Briain, whilst undertaking a doctorate on Brent Geese at University College Dublin, led the first of three Irish Brent Goose expeditions to Bathurst Island between 1984 and 1986. Micheál's PhD covered breeding phenology, site fidelity, dispersal and habitat use of marked geese during subsequent winters, and he was assisted by fellow members of the Irish Brent Goose Study Group. After finishing his thesis he kept an annual autumn vigil along Ireland's east coast compiling counts and assessing productivity until a move to Brussels in 1992.

After starting work at WWT Castle Espie in 1993, I joined Davey Andrews of the National Trust on weekly autumn counts of Brent Geese on Strangford Lough's northern mudflats recording arrival times, productivity and establishing annual peaks. A series of poor breeding seasons and the need for coordination of an increasing interest in Brent Goose research saw the re-emergence of the study group, renamed the Irish Brent Goose Research Group (IBGRG) and the reinstatement of a coordinated national Brent Goose census in 1996. WWT and the National Trust even began a Brent Goose festival to raise community awareness through sculpture, music and galas, launched in its inaugural year by the Canadian Honorary Consulate for Northern Ireland with the ceremonial lighting of a gas beacon by Scrabo Tower (County Down) and, as I recollect, nearly her hair and the closest bystanders!

The incoming of the millennium began a push by WWT to develop an International Species Action Plan for Light-bellied Brent Geese undertaken with financial help from government bodies and

Figure 1. The summer locations of Light-bellied Brent Geese satellite tagged in 2002 and 2004 (image provided by K. Colhoun).



underpinned by a ringing programme, satellite telemetry studies, and research using stable isotopes, supervised by Stuart Bearhop (then at Queens University, Belfast).

The drama that followed from the six satellite tagged birds caught and released in Iceland in 2002 (**Figure 1**), particularly the saga behind the demise of 'Kerry' the goose to an Inuit hunter, attracted international attention and in 2005 led BBC Northern Ireland to produce a documentary called 'Supergoose'. This film covered another batch of satellite tagged geese, an eccentric collection of goose biologists, Irish/Icelandic school exchanges and, most importantly, the follow-up filming of tracked geese on the breeding grounds and the first Irish expedition to the high Arctic since the mid-1980s.

Connections made during filming facilitated an IBGRG follow-up expedition two years later with the Icelandic Institute of Natural History (IINH) and Stuart Bearhop (now at Exeter University) piggy-backing a CWS Greater Snow Goose banding/avian influenza sampling programme around Axel Heiberg, Ellesmere and Bathurst Islands (northwest Canada).

The 2014 expedition was organised by Tomas Bodey and Stuart Bearhop and was divided into four stages. The initial stage, from mid-June to early July, would involve a team of five based in Eureka (northwest Ellesmere Island) trying to find nests during the onset of snow melt and the setting up of a field camp on the Schei Peninsula (Axel Heiberg).

Stage two was a partial team swap; Stuart and Gerry Murphy (IBGRG chairman) were replaced by Sean Boyd (CWS) and Freydis Vigusdottir (IINH) to follow up on nesting pairs and attempt Zodiac assisted catches of isolated flocks. A third stage, three in - two out, was to continue monitoring family groups and moulting flocks around the Schei Peninsula and attempt catches with helicopter support.

A final closing stage was to relocate to Resolute (Cornwallis Island) and from there survey the area from northwest Cornwallis to the Grinnell Peninsula (Devon Island), a cluster area for previous satellite tagged geese, looking for possible catching opportunities. The expedition had three main goals: (i) to continue Exeter University's examination of physiological stress through blood analysis, (ii) to investigate any connection between habitat quality and breeding success and (iii) to extend the marking programme for potential re-sampling of individuals in Iceland or Ireland. There was always a risk with this population's notorious boom and bust breeding success that there may be few juveniles to sample, but with poor breeding success in both 2012 (1%) and 2013 (0.1%) it was felt that 2014 would be worth a punt!

Thomas, Ian Cleasby and Stuart made it out in June to join Arctic resident, Chantelle Mason, recruited from

Nunavet's capital, Iqaluit, but leaving behind a very disappointed IBGRG chairman Gerry Murphy who had aggravated an old knee injury while in pre-expedition preparation. Following their blog back in Ireland we learnt that Eureka Wolves were playing havoc with bowel movements! More importantly, up to two dozen nests had been found on nearby islands. With snow melt well advanced and the land starting to dry, the team had set up a field camp on the land bridge south of the Schei Peninsula and a few small isolated flocks had been caught for sampling and ringing.

With my extended leave approved by WWT, kit researched, borrowed or bought, Canadian government waivers and risk assessments signed and forwarded, I was at last ready to join Graham McElwaine (IBGRG database expert) on the flight out in mid-July. Last minute liaison with Kendrew Colhoun and Stuart for any specific equipment needs added chest waders and ASDA savouries, to strain the 23 kg limit on our connecting flight to London. The Crown Bar Belfast marked the start of the trip for a 'just in case' last pint of Guinness followed with top ups in Dublin, London, Toronto and Ottawa where we caught up with Alyn Walsh from Wexford, and the early flight to Iqaluit (Baffin Island) the following day (**Figure 2**). Here we had an hour in hand for taking in the arctic architecture, arctic spring flora, Inuit sculpture, cars that stop regardless of where you cross the road and the town's huskies on wasteland adjacent to the airport. The second part of this arctic hop was the two hour (2/3 cargo, 1/3 passenger) First Air flight to Resolute which had to overshoot its Arctic Bay stop due to low cloud but thankfully made its destination: the first flight in for five days.

Resolute hosts the Polar Continental Shelf Project (PCSP) HQ where all expeditions in the Canadian High Arctic are facilitated, supplied and monitored – as and when weather allows. Having given up on the expedition's lost canister of liquid nitrogen and grocery order, we had more luck with the extra CWS goose net from the PCSP warehouse. With a weather window widening, our Twin Otter flight left for Eureka the following morning with all the gear, a few barrels of fuel and John Innis, our scheduled chopper pilot and at 73 a true Arctic veteran.

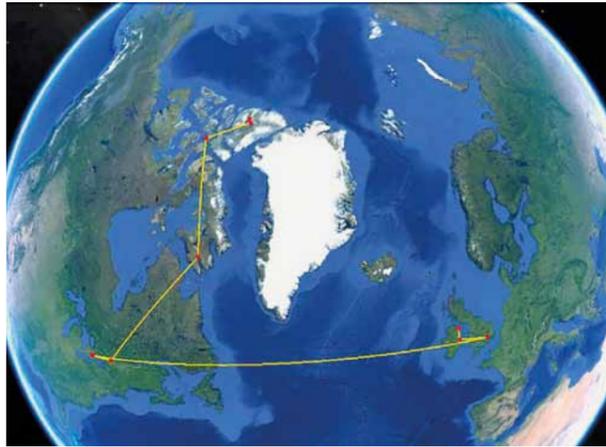


Figure 2. The journey from Belfast (Northern Ireland) to Eureka (Ellesmere Island, Canada), July 2014 expedition.

Two and half hours of tundra, cloud, sea ice and more cloud later, we landed on Eureka's dirt runway supplying a permanently staffed weather station and surrounded by an assortment of derelict wooden field huts, more modern polytunnel versions and a recently vacated seasonal Canadian army base. There was a brief chance to catch up with the outgoing team while their gear, and that of other expeditions, was loaded for the return flight to Resolute. Talk of a Polar Bear visiting camp the previous week prompted a review of bear procedures and familiarisation with shotguns and flares.

Our accommodation was the Eureka Weatherhaven, an officially decommissioned polytunnel, divided into rooms and mess area, which provides shelter for those who may find themselves temporarily stranded while waiting for favourable weather in Resolute. The longer the wait the tidier, and busier, it becomes, providing a wealth of ideas, experience and stories from the various expedition teams passing through. Although entertained by the resident skuas and their hand feeding performances, the Eureka Wolves by this time had moved on.

John Innis shuttled us into the Schei Peninsula camp the following morning, sighting small flocks of brent en route. Six tents backing into the prevailing wind along with a larger mess tent were pitched between thawing lakes and sea ice, surrounded by a landscape of rocky desert and sparse arctic flora. As we unpacked a shout of Wolf brought us out of our tents with cameras at the ready only to be confronted with a lumbering Polar Bear as it appeared along the far side of the lake. Stopping occasionally to sniff the air, it quartered the camp showing enough interest to warrant a mixture of bangers and flares to be launched overhead. The bear eventually ambled on southwards leaving us a little perturbed but with a healthy air of responsibility towards our bear watch duties.

With the camp quad bike temporarily out of action, abandoned on the adjacent peninsula, the first few days involved splitting into two teams (two shotguns) and yomping to look for moulting flocks, isolated pairs and/or family groups that might be catchable.

This far north, birds of any species are thin on the ground as, in all our traversing, we only came across a few pairs of Arctic Tern, skua, Red-throated Diver, King Eider, Greater Snow Goose, Turnstone and Knot. All post-nesting birds, whether moulting or fledglings, were highly mobile and were rarely found in the same vicinity on consecutive days. Small herds of Muskox could be seen in the distance on neighbouring peninsulas, with one lone individual encountered that kept us guessing as to its intentions as it stamped, trotted and feinted menace nearby the whole way back to camp.

Once a replacement quad had been flown in we could then transport the Zodiacs for catching attempts, successfully rounding up one moulting pair of failed breeders (boy are they quick on their legs!) whilst an attempt on another flock failed close to the nets as the geese simply took flight! With a helicopter booked on 26 July we hoped to catch a reasonable sized flock seen hiding between chunks of sea ice a few days previously. Relocating them on the day was a different ball game and 100 miles had to be flown before we eventually tracked them down, successfully catching 80 almost fully-winged geese, several of which were failed laying females.

Non-helicopter days were spent trying to locate and observe family groups with the difficulty being seeing them before they saw us. One small coastal lake supporting relatively lush vegetation provided grazing for three families which spotted us a mile away running to the protection of the bay and open water. Here they

spent the next hour unsettled showing a mixture of displacement and inter family aggression, exemplified by the flypast of a Snowy Owl which perched on a nearby rock. The brent families eventually made their way back to the ponds and settled down to a relaxed feeding pattern. Apart from Snowy Owls, predators didn't appear to be prevalent in the area with only two sightings of Arctic Fox during the early hours of bear watch, their presence given away by harassing skuas.

Another flying day took us out to two breeding islands to gather down from vacated nests and recover thermal data loggers for the timing of hatching and nest abandonment. Two of three attempted catches were successful that same afternoon with a good sample of goslings ranging from ten days to three weeks old. A final survey and catch attempt was made as we broke camp, finding family groups 60 km to the northwest with older goslings between three and four weeks old, taking our overall total to 186 birds.

Eventually air lifted back to Resolute to the PCSP HQ, we not only rejoined John Innis and his helicopter but also Stuart who had come back to personally courier a bottle of liquid nitrogen and for one last epic flight covering some 500 km and two fuel dumps to survey an area from Cornwallis across to north Devon, returning via Polar Bear pass on eastern Bathurst. We saw a few hundred fully-winged geese but no families with many coastlines and bays completely frozen over – a very different situation to the one we had experienced on northern Axel Heiberg. Disappointing yes, but an important contrast in breeding success between the two areas nonetheless and some stunning views of Walrus, a Polar Bear with a cub and even a Narwal.

With temperatures too cold to fly the following day we made use of a PCSP transport to visit Resolute village where Sean Boyd had suggested we should look up an Inuit called Paul – the very same hunter that had shot my namesake 12 years previously. We found him, but only for a brief and guarded conversation on hunting, our interest in either ring resightings or recoveries, and Paul's claims of European pollution and its affect on the condition of his returning quarry. Having turned down a photo opportunity and with meetings to go to, he went on his way.

With flights back to Ottawa the following morning we said our farewells to team Exeter who still had another reconnaissance flight up to northeast Cornwallis scheduled for the following day.

Back on Strangford Lough, my autumn fieldwork had the added incentive to see which families would return and I had delight in seeing one large family group carrying red and blue ring combinations from WWT Castle Espie's hides. Continuing autumn brent surveys with the National Trust and Alex Portig we estimated breeding success at c.3.5% young, all no doubt from the more northerly latitudes of the high Canadian Arctic!

A big thank you to Katrina and the boys for allowing school holiday absenteeism and my father, Paddy Mackie, who having supported the Irish expeditions in the mid-1980s also made my part in this expedition possible.



Photo: Kerry Mackie



Photo: Kerry Mackie

An update on the Islay sustainable goose management strategy

Rae McKenzie

The Islay Sustainable Goose Management Strategy was agreed by Scottish Ministers in December 2014. It is a ten-year strategy, running from October 2014 to April 2024, which will cover goose management on the island of Islay, in Argyll, and will be subject to review every two years. The aim of the strategy is to deliver long-term sustainable goose management on Islay using an adaptive management approach to wildlife management.

The strategy will meet the Scottish policy objectives for goose management, which are:

- meet the UK's nature conservation obligations for geese, within the context of wider biodiversity objectives.
- minimise economic losses experienced by farmers and crofters as a result of the presence of geese.
- maximise the value for money of public expenditure.

To achieve these aims, the strategy will:

- manage habitat to support feeding Greenland White-fronted Geese through development of diversionary feeding techniques and management of rush pasture;
- ensure that large areas of suitable habitat on Islay are available to geese as undisturbed roosting and feeding areas;
- maintain a viable population of Barnacle Geese at a level which meets our conservation obligations;
- reduce damage to grass crops by reducing the number of Barnacle Geese, therefore reducing the impact of geese on the agricultural economy of Islay; and
- ensure that compensation payments to farmers for goose damage are targeted at the most appropriate management activities.

The strategy will provide a framework from which a new goose management scheme for Islay will be developed by the Islay Local Goose Management Group in summer 2015.

The strategy is required for two reasons; damage by Barnacle Geese on Islay is continuing at a level which causes serious agricultural damage, and the numbers of Greenland White-fronted Geese have fallen to a very low level on Islay (as they have done across their winter range). Previous goose management schemes have not fully addressed these issues. Both of these populations of goose are covered by Annex I of the EU Birds Directive.

The effects of management on Islay on the overall populations across their ranges must be taken into account. The strategy will also consider future management of Greylag Geese, if necessary.

The strategy will develop trials of diversionary feeding and management of rush pasture habitat to provide increased feeding opportunities for Greenland White-fronted Geese as alternatives to improved grassland.

Work began in January 2015 to measure damage caused by geese through sward height measurements, reseeding frequency or other appropriate means. Baseline data will be gathered during the first year of the strategy. No population reduction of Barnacle Geese will begin until sufficient, scientifically robust, baseline data have been collected.

The strategy will measure economic losses by using the area payment calculation and the levels of compensation paid to farmers. It may also develop agricultural economic business models to assess the level of economic damage and measure the impacts on farm businesses of reducing goose damage.

The strategy will maintain international obligations for Annex I species but proposes to reduce damage by reducing the number of Barnacle Geese. Target levels will be within agreed ranges and any reduction will be done in increments. When agreeing bag limits for the coming winters, there will be careful consideration given to the recent decrease in Barnacle Goose numbers as a result of low productivity.

The strategy proposes that the Islay Barnacle Goose population should be managed initially to ensure that it does not rise above the current level whilst baseline data are collected. That level is 41,250 (+/-10%). The strategy then proposes that damage to crops is reduced by 25–35% across Islay. To achieve this it is proposed that the Islay Barnacle Goose population is reduced to a range of 28,000 to 31,000 geese and thereafter is maintained within that range. This represents a 25–30% reduction in numbers and it is thought that this, along with continued non-lethal scaring and the development of new scaring techniques will result in a comparable reduction in the current levels of damage to crops.

The lower limit of the range proposed will mean there are 8,000–11,000 more Barnacle Geese on Islay than were present at the time of the classification of Special Protection Areas for geese in 1988.

Significant areas of Islay (more than 70%) will remain as undisturbed feeding areas, including large proportions of grassland on individual farms, RSPB reserves and rough grazings, dune grasslands, saltmarsh and roost areas.

Although the Greenland Barnacle Goose population is fully protected in the UK under the EU Birds Directive, it can be controlled, in limited circumstances, using the derogation provided by Article 9 of the Directive. This allows the lethal control of Annex I species under licence to prevent serious agricultural damage. The strategy will also continue to develop or trial new scaring or crop management techniques to prevent damage. If these are successful in preventing damage, the proposed reduction in the Barnacle Goose population may not need to be at the level suggested within the strategy.

Damage measurements will continue throughout the course of the strategy implementation to ensure that we can demonstrate that management actions are achieving the expected outcomes. Goose counts will continue using the current methodology to ensure that an accurate record of the numbers and trends of both populations is collected.

Our legal obligation to maintain populations of Annex I species means that damage may be reduced but will never be completely prevented.

The strategy recognises that farmers require continued financial support for continuing to feed large numbers of protected geese. In some areas, especially close to roosts, it is anticipated that geese will continue to feed in high densities.

The strategy will cost more to implement than the current scheme as it will introduce new costs for measuring damage, reducing Barnacle Goose numbers, developing new scaring techniques and trialling diversionary feeding.

Whilst the strategy aims to reduce costs in the longer term, any initial savings will be made by the farmers who currently bear a significant proportion of the costs of supporting geese. It is unlikely that savings will be made on the public share of the costs within this ten-year plan. Longer term savings to both farmers and the public purse may be possible if damage is reduced to the levels suggested and that reduction results in a reduced reseeding frequency.

Photo: Sacha Dench / WWT

Bewick's Swans: a new hope

Kevin Wood, Eileen Rees, Julia Newth & Geoff Hilton

Following WWT's successful 'Hope for Swans' appeal, research is being undertaken to understand the causes of the Bewick's Swan population decline.



Photo: WWT

Few readers of *GooseNews* will be unfamiliar with the Bewick's Swan. This iconic waterbird is instantly recognisable with its all-white plumage and characteristic yellow and black bill pattern. For many years the northwest European population of Bewick's Swan was a conservation success story, with numbers rising steadily from around 16,000 birds in 1986 to 29,000 in 1995. However, since 1995 the outlook has changed as the population has suffered a sharp decline, dropping to around 21,500 birds in 2005 and 18,000 in 2010. The final results of the most recent International Swan Census, held in January 2015, will not be known until later this year, but the early results suggest no sign of a halt in the decline. There has also been a marked shift in the swans' winter distribution, with declines particularly evident in Ireland, the most westerly part of the wintering range.

Our ability to halt and reverse the decline in Bewick's Swan numbers will be limited unless we can identify the reasons why the population has changed over time. Bewick's Swan researchers, therefore,

gathered in St Petersburg in 2009 to draft the Bewick's Swan Species Action Plan¹ (BSSAP), later adopted by the African-Eurasian Waterbird Agreement (AEWA), which identified possible causes and highlighted the need for research across the entire flyway. Climate change, changes in predation pressure, illegal shooting, lead poisoning, oil and gas drilling in the breeding area, wind farm development, changes in agriculture at key wintering sites, interspecific competition with Whooper Swans, density-dependent effects, human disturbance, migratory short-stopping, and reindeer herding within the breeding area have all been raised as possible contributors to the changes in population size and distribution.



Participants at the Bewick's Swan Action Plan workshop in St Petersburg, 2009

In 2014, WWT launched the successful 'Hope for Swans' appeal to fund a two-year research programme to investigate the causes of the population decline. This programme will draw together Bewick's Swan researchers from across different range countries and consists of three main stages.

In the first part of the research programme we will use statistical modelling to relate demographic parameters, such as annual breeding success and survival, to potential environmental drivers, including climate variables and predation pressure. WWT has been monitoring the Bewick's Swan population since the days of Sir Peter Scott and consequently has information on swan numbers, survival, and breeding success from the 1960s to the present day.

Our ability to halt and reverse the decline in Bewick's Swan numbers will be limited unless we can identify the reasons why the population has changed over time.

The aim of our research is twofold. Firstly, to quantify how Bewick's Swan demography has changed over time and secondly to identify the factors that are influencing these demographic parameters. This includes assessing any temporal changes in the numbers and weights of fledged cygnets, and the survival of all age classes. We will also focus on identifying any between-site differences in survival which could offer valuable clues on the best ways to

manage key wintering sites.

The second phase of the research programme will involve incorporating our demographic data and its environmental drivers into a population model. This model will allow us to examine the relative contributions of changes in breeding success and survival to the observed changes in population size. Once we have tested our model against real-world data, to make certain it is giving reasonable predictions, we can use the model to project future changes in population size. The development of predictive tools such as this will help in the planning of conservation strategies for the Bewick's Swan.

The final phase of this project will be the development of an individual-based model (IBM) of Bewick's Swans on their

wintering grounds, with a focus on their traditional stronghold of the Ouse Washes in eastern England. IBMs are simulation models that predict the movement and resource-use of animals within a landscape. The basis for prediction is fitness-maximising behavioural rules (e.g. 'always feed in the most profitable location'), rather than statistical relationships which are only valid within a limited data range, and so IBMs can generate accurate predictions even as the environment changes dramatically. Consequently, IBMs are powerful tools for predicting how individuals and populations will respond to changes in their environment, and have been used to inform the conservation of a range of waterbird species. The data needed to run and test the model will be gathered from fieldwork carried out in winter 2015/16, existing field data, and the extensive literature on Bewick's Swan ecology.

Once validated against real-world data, we will use our IBM to predict how recent changes in land management and competition with the larger Whooper Swans have affected Bewick's Swan body condition, habitat use, and survival. We also plan to develop a second IBM, in collaboration with researchers in other range states, of the entire wintering range to allow us to examine the effects of climate change, agriculture, and short-stopping, on swan body condition, survival, and distribution.

By the end of our research programme we will have a much more comprehensive understanding of the causes of the recent changes in Bewick's Swan population size and distribution. In the longer term, we will be working closely both with our own reserve staff and other land managers across the flyway to use these insights as an evidence-base to inform swan conservation, with the ultimate aim of halting and then reversing the decline in population size.

¹ The Bewick's Swan Species Action Plan can be downloaded from the AEWA website at <http://www.unep-aewa.org/en/publication/international-single-species-action-plan-conservation-northwest-european-population>

GSMP Counters' Conference 2014

Carl Mitchell

Early September 2014 saw 30 volunteer GSMP counters gather at WWT Caerlaverock in Dumfriesshire for a one day conference/workshop.

The day featured a series of talks by programme organisers, volunteers and guest speakers and highlighted the huge volunteer effort that has made the programme possible over the years. Carl Mitchell (WWT, GSMP project manager) opened the conference with an overview of goose and swan monitoring in the UK, including how the count data are used – for example in the designation and periodic assessment of protected sites - and emphasised the importance of the work carried out by the GSMP network. Thirteen populations of eight species are monitored annually and the scheme is fortunate to have a hearty band of counters who provide annual assessments of goose numbers and breeding success in their areas.

Helen Boland (BirdWatch Ireland) gave a fascinating talk on goose surveillance in Ireland and the difficulties encountered monitoring Iceland Greylag Geese wintering there. Many sites now support both summering Greylag Geese and winter migrants from Iceland – a situation shared by counters in parts of Scotland too.

Arnór Þórir Sigfússon gave an interesting insight into the monitoring of Pink-footed and Greylag Geese in Iceland and the role of volunteer counters from the



Photo: Colette Hall

hunting community and aerial surveys in finding Iceland's well dispersed geese. The timing of the departure of Greylag Geese from Iceland on their autumn migration has moved later into the year in the last 15 years and surveillance in that country is becoming increasingly important in assessing flyway population totals.

Icelandic-breeding Goose Census (IGC) Local Organiser Allan Brown gave us a glimpse of the dedicated coordination of winter goose counts in Fife, Lothians and the Borders, and the changing trends in goose numbers in those regions. His talk contrasted the fortunes of Pink-footed Geese, which can often arrive in very large numbers at a small number of key sites quite early in the autumn, with the dramatic decline in wintering Iceland Greylag Geese as their winter range has shifted north.

WWT's Larry Griffin spoke on goose counting on the Inner Solway Firth and how the latest tracking technology is helping to answer questions on local scale movements and at the flyway scale during the annual migrations of goose species.

Two workshops in the afternoon allowed a discussion by all participants on online recording, *GooseNews* and surveillance of Greylag Geese. It was marvellous to see like-minded participants from all aspects of the GSMP meeting to talk about their work and share their experiences. A very big thank you to everyone who attended, particularly to all the speakers for their excellent contributions, and especially to the volunteer counters who travelled to Caerlaverock for the day.

Photo: WWT



IGC and age assessments now online

Steve Roe

Online recording is now the main way of collecting biological conservation evidence: in fact you probably already use online recording to supply observations to other organisations.

GSMP volunteers will be aware that WWT has been building an online database for observers to easily add and view their data. 'WWT Waterbird Monitoring Online' (WMO) (<http://monitoring.wwt.org.uk/recording/>) uses 'Indicia', an open source biological recording system also used by the Centre for Ecology and Hydrology, Open Air Laboratory (OPAL) and the National Biodiversity Network.

We are pleased to announce that recording pages for the Icelandic-breeding Goose Census (IGC) and National goose and swan age assessments have now been launched! These new pages offer both data entry and reporting functions to observers. You are guided through the data entry process and the WMO system will validate and confirm your data as you enter it. Once this is completed, you'll be able to browse through the summary of your data. You can check the detail of the data and if within the season, you'll be able to amend the data too.

The main difference between the IGC and age assessment recording forms is that observers can only supply IGC counts for sites that have been allocated to

them, whilst data for age assessments can be supplied for any location. If you would like to be involved in the IGC you will need to be assigned count units, so please get in touch to find out more.

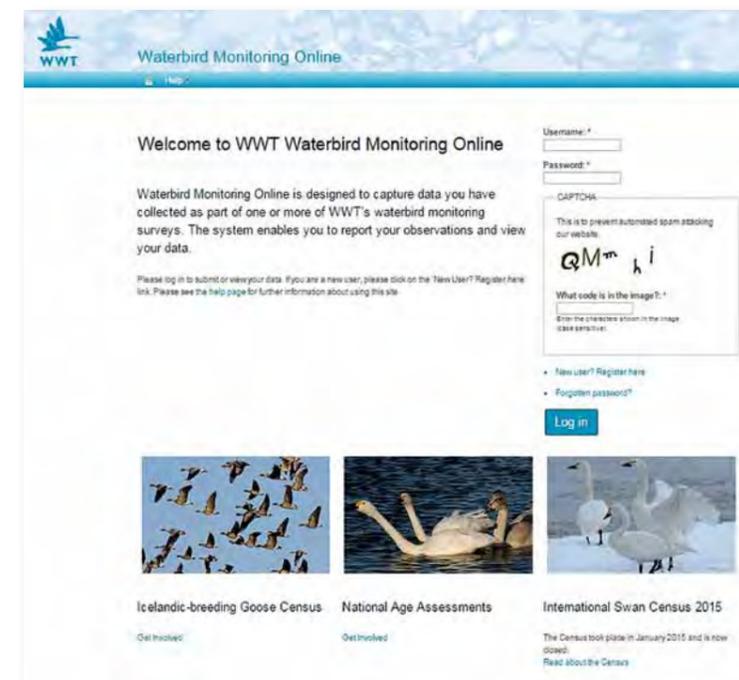
The launch follows that of a recording module for the International Swan Census (ISC), which has been in operation since December 2014. This enabled observers to add records of swans from established WeBS or I-WeBS sites, or alternatively from additional sites by searching for the location using a map or name search tool.

A useful feature is the ISC summary report which shows results as they come in. Users can browse data that other observers have submitted by either clicking on a map or filtering a table of visits. If you haven't seen this then please explore the records at <http://monitoring.wwt.org.uk/recording/ISC-summary>. A similar feature will be developed for the IGC and age assessment records.

We were really pleased with the uptake of WMO for the ISC. At the time of writing, a total of 7,800 Bewick's and 35,400 Whooper Swans (including duplicate counts) had been recorded. These figures are not definitive as data are now being checked for duplication and validated before the final population estimates are published. We can report that 386 observers undertook the census, covering over 1,300 sites. Thank you to all 163 ISC observers that registered and supplied their counts and counts on behalf of others.

We'd very much like to say thanks to everyone who's given us feedback so far on WMO: this has helped us to develop and improve the system. Although not an exclusive list, thank you to Helen Boland, Allan Brown, Andrew van Breda, Olivia Crowe and Graham McElwaine. We'll keep you updated on progress via WMO and the Monitoring Unit website <http://monitoring.wwt.org.uk/>.

If you have any queries or comments on WMO please contact Steve Roe (see back page for contact details) or email monitoring@wwt.org.uk.



Counter profile

Mike Bell, Icelandic-breeding Goose Census Local Organiser for Perthshire and Central Scotland

How and when did you get involved in goose and swan monitoring?

I have been interested in wildlife from an early age and soon realised that numbers were important from both the viewpoint of a bird watching spectacle and for conservation reasons. I quickly became something of a compulsive bird counter. I carried out my first official waterbird count at Malham Tarn in November 1969 for the International Waterbird Counts (now International Waterbird Census) and have been involved in counting waterbirds at various sites ever since. When I moved to Aberdeen in 1975, the wintering grey geese quickly became a focus of my bird watching and I spent many winter weekends counting Pink-footed and Greylag Geese at roosts or on their feeding areas, and publishing papers on these aspects of goose ecology in northeast Scotland. I moved to Dunblane in 1986 and continued this interest in Perthshire with the Carsebreck Lochs and Dupplin Loch becoming my main sites.

Have there been any particular changes in the status or distribution of geese in your area in recent years?

There have been many changes in the status and distribution of both Pink-footed and Greylag Geese since I became involved in their monitoring. There has been a huge redistribution north of Iceland Greylags, with the Perthshire sites largely abandoned by the mid-1990s and those in northeast Scotland in the 2000s as the whole population moved north to the Moray Firth and then to Orkney.

It is hard to imagine that when the goose counts were first started in the 1960s Perthshire held about two-thirds of the Iceland Greylag Geese in Britain, with up to 40,000 birds found on the November counts. Today c.2,000 Greylag Geese is a decent total here and some of these are from the re-established British population.

There has also been a redistribution of Pink-footed Geese, with the importance of several roosts changing dramatically over the years. One of my biggest disappointments was the abandonment of the roost at Dupplin Loch in the late 1990s when Otters arrived there. For over 60 years this had been the single most important Pinkfoot roost in Britain, with huge numbers present in autumn, especially just after they arrived in late September. Now they only occasionally roost there and most of the wintering and breeding waterfowl have gone also.

Some of these Pinkfeet appear to have moved to the Carsebreck Lochs but most have probably gone to the Montrose Basin. Another change that has occurred since I first became involved with goose monitoring is that it is now rarely possible to obtain reliable roost counts at dusk other than in early autumn just after the Pinkfeet arrive or in late spring just before they depart because they now return to roost when it is too dark to



see them and indeed can return hours after sunset, even on totally overcast nights.

What have been your favourite moments, and what do you enjoy and what motivates you most about your role in the GSMP?

I have always enjoyed the spectacle of large numbers of waterbirds and watching dusk or dawn flights of thousands of geese still enthral me. I have seen many spectacular sunsets and sunrises over the years. Why do I do it? I suppose it would be trite to say because they are there but to some extent that is true, but it is also to contribute to the monitoring of these populations of geese and therefore their conservation. Dawn is also a great time to be out observing other wildlife. I have always been well motivated so I find it rather hard to understand why people would need motivating to help with the goose and waterbird monitoring programmes.

How would you inspire or encourage others to get involved in monitoring?

Instilling an interest in natural history in young children and hoping that interest remains with them for the rest of their lives is clearly important and organisations such as WWT, RSPB and the Wildlife Trusts are doing a great job in that respect. The age profile of the counter network is worrying. Finding people prepared to help with dawn goose counts is a big problem; the younger generation seem to be 'owls' rather than 'larks'. No easy answers to that problem I fear.

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 Monitoring Unit at monitoring@wwt.org.uk.

Latest news from GSMP surveys

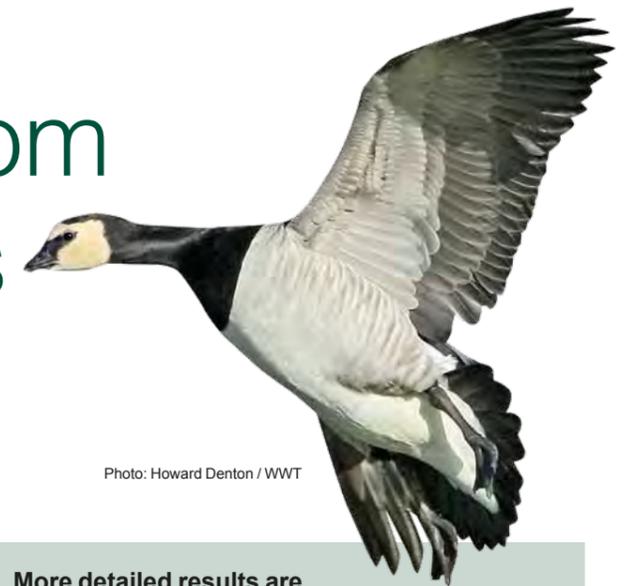


Photo: Howard Denton / WWT

Winter 2014/15 saw the largest population estimate for Iceland/Greenland Pink-footed Geese ever recorded but the count of Iceland Greylag Geese was below 100,000 birds for the second year in a row. The population estimate of Greenland White-fronted Geese (for 2013/14) was the lowest since 1984/85. Swans and geese breeding in arctic Russia had mixed fortunes; Dark-bellied Brent Geese had a relatively good breeding season, yet Bewick's Swans and European White-fronted Geese had a relatively poor breeding year. Both populations of Barnacle Geese and both populations of Light-bellied Brent Geese also had poor breeding seasons.

More detailed results are available on WWT's monitoring website at <http://monitoring.wwt.org.uk>

Total counts and the breeding success (percentage young and mean brood size) of goose and swan populations recorded during various surveys in 2014/15; except the results for Greenland White-fronted Goose which are for 2013/14. 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	-	10.3	1.5
Iceland Whooper Swan	-	20.0	2.2
Taiga Bean Goose	263 ²	4.4	1.4
Greenland/Iceland Pink-footed Goose	393,170 ³	19.4	2.0
European White-fronted Goose	-	30.7	-
Greenland White-fronted Goose	20,797 ⁴	17.0 (Islay) 6.8 (Wexford)	3.28 (Islay) 2.9 (Wexford)
Iceland Greylag Goose	89,668 ³	22.3	2.7
British Greylag Goose	-	30.5 (Orkney) 35.2 (Tiree)	3.07 (Orkney) 2.27 (Tiree)
Greenland Barnacle Goose	-	2.7 (Islay)	1.4 (Islay)
Svalbard Barnacle Goose	37,300 ⁵	5.0	1.7
Dark-bellied Brent Goose	-	23.0	2.76
Canadian Light-bellied Brent Goose	31,985 ⁶	4.1	2.1
East Atlantic Light-bellied Brent Goose	7,300 ⁷	6.4 (Lindisfarne)	-



Photo: John Anderson

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. 2015. *Population and distribution of Bean Geese in the Slamannan area 2014/15*. Report to the Bean Goose Action Group and Ben Lewis (RSPB) in litt.

³ Flyway total. From; Mitchell, C. 2015. *Status and distribution of Icelandic-breeding geese: results of the 2014 international census*. Wildfowl & Wetlands Trust Report, Slimbridge.

⁴ Flyway total. From; Fox, A.D., I.S. Francis, D. Norriss & A.J. Walsh. 2014. *Report of the 2013/14 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.

Mixed breeding success of migratory swans

Julia Newth

A fantastic counter turnout for the International Swan Census enabled comprehensive assessments of breeding success for both of our migratory swans in January 2015. Observers across Britain and Ireland managed to age a staggering 3,633 Bewick's Swans and 19,434 Iceland Whooper Swans, representing approximately 20% and 67% of the total populations, respectively.

The results brought mixed news about breeding success in 2014. Iceland was blessed with a warmer than average spring and this certainly seemed to provide ideal conditions for the Whooper Swans. They experienced a good breeding season with observers recording 20.0% young and a mean brood size of 2.2 cygnets at all sites surveyed across Britain and Ireland.

Conversely, Bewick's Swans suffered a poor breeding season with just 10.3% young recorded in flocks wintering in Britain. The mean brood size was 1.5 cygnets. This continues a period of poor breeding seasons during which the population has been in decline. The reasons for this are poorly known but may be related to climate driven environmental and ecological change in the Arctic. Between 1995 and 2010, the total population size fell from c.29,000 to c.18,000 birds and the species was recently classified as 'Endangered' in Europe in the European Red List of Birds. WWT is working with colleagues across the flyway to identify the key factors driving the decline (see Kevin Wood's article on page 12).

Full results from the 2015 International Swan Census will confirm the current population status of migratory swans wintering in Britain and we hope to bring you news of this in the next edition of *GooseNews*.

2015 International Swan Census

Colette Hall

A big thank you goes to everyone who contributed to the latest International Swan Census held in January 2015.

The census is organised every five years by the Wetlands International / IUCN SSC Swan Specialist Group and covers the three populations of migratory swans that occur in northwest Europe: the Northwest Mainland Europe Whooper, the Icelandic Whooper and the Northwest European Bewick's.

WWT works in partnership with BirdWatch Ireland, the Irish Whooper Swan Study Group and our colleague Óli Einarsson in Iceland to coordinate the census of the Icelandic Whooper population. Together, we also ensure coordinated counts of Bewick's Swans are undertaken in Britain and Ireland, although very few Bewick's now occur in the latter.

We are extremely grateful to the WeBS, I-WeBS and other volunteer networks, to the local organisers and to the census coordinators for all their effort and support. Without everyone's tremendous help, a census like this could not happen.

At the time of writing, data are still being collated and analysed. Results will be published in the next edition of *GooseNews* and on our website at <http://monitoring.wwt.org.uk/>; further information about the census can also be found there, including reports from previous surveys.

The Icelandic-breeding Goose Census 2014

Carl Mitchell

Autumn 2014 saw Pink-footed Goose numbers, once again, at a record level. A total of 393,170 geese was counted in mid-October through the IGC, the highest count on record and a 5.7% increase on the census-based estimate in 2013. Census coverage was excellent and the count date in mid-October appears to have been well timed since the bulk of the birds had arrived in the UK from Iceland and Greenland. In a few previous years, notably in 2010 and 2011, a coordinated count earlier in October led to undercounts, as large numbers of (uncounted) geese were still in Iceland at the time. However, a harsh winter in 2010/11 and low breeding success in 2011 may also have contributed to low counts in those two years.

Omitting the low counts in 2010 and 2011 reveals that the population first passed 350,000 in 2008 and has slowly increased, by 11% to 393,000 birds, in the last six years. Breeding success in 2014 was about average at 19.4% young, with a mean brood size of two goslings per successful pair. Some notably large counts were reported, as might be expected with such a large population total. Montrose Basin led the field with a count of 78,970 geese counted on 19 October, and which must have been a truly impressive wildlife spectacle but 22 sites also held over 5,000 geese and 12 sites held over 10,000 geese.

Iceland Greylag Geese remain awkward to count.

As mentioned in previous annual reports and in *GooseNews*, an increasing number of British Greylag Geese now reside in the wintering areas used by the migrants from Iceland. Separating the two, at a time when both populations are present, is impossible and a combination of late summer and early winter counts, ideally in combination with some understanding of the seasonal movements of the British birds, are needed so that the number of Iceland birds can be accurately estimated.

The November 2014 population estimate was 89,668 Iceland Greylag Geese, very similar to the figure for 2013, but considerably lower than the numbers found during 2009–2012. At the time of the census, in mid-November, an estimated 32,000 Greylag Geese remained in Iceland and 65,067 were counted in Orkney (although an estimated 18,000 of these were British birds). Trying to estimate annual breeding success is also fraught with difficulties for the same reasons, however, estimates of 22.3% young and a mean brood size of 2.7 young per successful pair were obtained. A spring count of both Pink-footed and Iceland Greylag Geese was also completed in late February/early March 2015. Although the number of geese recorded was far fewer than in the autumn, the counts again provided valuable information on the distribution of geese at this time of year.

Taiga Bean Geese wintering in Britain in 2014/15

Carl Mitchell

During winter 2014/15, monitoring of Taiga Bean Goose was undertaken at the Slamannan Plateau, Falkirk, by members of the Bean Goose Action Group and at the Yare Valley, Norfolk, by RSPB reserve wardens. A peak count of 231 birds was recorded at Slamannan, slightly lower than the previous year (237). At the Yare Valley, where the number of wintering Bean Geese has been declining since 1993/94, the peak count of 32 geese was lower than the previous winter, and the lowest since 1964/65. Can anything be done to halt this decline? We know that the flyway population is declining and is subject to an AEWA International Single Species Action Plan (see page 29 of *GooseNews* 13:29). The decline in numbers wintering in the UK may, therefore, be reflecting the decrease in numbers worldwide. Or are we also witnessing 'short-stopping', as Bean Geese winter further east, closer to their summer quarters, as has happened with



Photo: John Anderson

European White-fronted Geese which formerly wintered in the tens of thousands in the UK?

Breeding success was estimated from a sample of 158 birds at Slamannan in late October and only seven birds were aged as first winter (4.4% young) with a mean brood size of 1.4 young per successful family. The number of Bean Geese wintering at Slamannan has remained at 200–300 birds since 2002/03 and low annual productivity in some years may also help explain why the numbers there are not increasing.

Thanks to Angus MacIver, Ben Lewis and Larry Griffin for providing data reproduced here.

Photo: Sacha Dench / WWT

Increasing numbers of British Greylags in Scotland

Carl Mitchell

Monitoring of British Greylag Geese continued at a number of key sites in Scotland, particularly those where there is conflict with agriculture. Scottish Natural Heritage (SNH) are now reducing the numbers of British Greylag Geese in four pilot areas in an attempt to alleviate agricultural damage (see *GooseNews* 12:5); it is now planned to shoot geese in Lewis/Harris, in addition to the existing trial areas of Orkney, Tiree and the Uists. On Orkney, a survey in late August 2014 found 22,911 geese, a 7.2% increase on the previous year, despite nearly 8,500 geese being shot there in the previous 12 months. Breeding success was estimated at 30.5% young from a sample of 933 birds aged, with a mean of 3.07 young per successful pair.

Between c.20,000 and c.23,000 Greylag Geese have been counted in Orkney during late August in 2012 to 2014, suggesting that the rapid increase in numbers up

to 2012 (of up c.19% per annum) has stopped and that, due to increased shooting, the population trend has stabilised. On Tiree, the late August count was 2,808 geese, 21% higher than the recent five-year mean (2,324 geese, 2009-2013) although it is recognised that the count in the previous year was an underestimate.

Breeding success once again appeared to be high with 35.2% young (n=2,240) and a mean brood size of 2.27 per successful pair. This was the ninth year in a row that breeding success was over 30% young, the highest recent value being 40.3% young recorded in 2008. Greylag Geese are generally exceptionally successful breeders. On the Uists, 8,233 Greylag Geese were counted in September 2014, (with an additional 226 birds on Barra), an increase of 17% on the previous year, despite at least 1,800 birds being shot in the previous 12 months.

Greenland White-fronted Geese in 2013/14

Tony Fox, Alyn Walsh, Ian Francis & David Norriss

It does not seem possible that winter 2013/14 marked the 32nd year of annual monitoring of Greenland White-fronted Geese! The network of counters was established in winter 1982/83 in response to changes in hunting legislation in the Republic of Ireland and the UK. The law protected White-fronted Geese in Scotland which effectively removed most of the Greenland subspecies from the risk of being shot in the UK, while a voluntary ban on shooting the geese by the wildfowling club that had exclusive access to shooting on the Dyfi Estuary had protected the only regular Welsh flock there since the 1970s. Hunting throughout Ireland ceased at the same time. Hence, the objective was to monitor the effects of these changes in the law that effectively removed hunting in winter on overall abundance, although the reality was that we had very poor count coverage in the years previously.

Before 1982/83, some of the better known regular haunts (such as Islay and Wexford, still the most numerically important wintering areas in Scotland and Ireland, respectively) had been counted annually. However, the majority of the smaller wintering flocks were not monitored, so achieving full coverage was a vital objective to provide meaningful assessments of total abundance. Much has happened since, because after a period of increase following the protective legislation, the instigation of regular counts at all known resorts of this population has given great insight into changes in abundance over very many years. The combination of the count network and the results of

individual colour-marking back to 1979 also confirm that the population winters regularly at less than 80 sites throughout Ireland and Britain, so obtaining coverage at all these sites has generated a vital overview of the distribution and abundance of the entire world population.

This long run of counts now show that the population increased from 16,500 in spring 1983 to peak at 35,573 in spring 1999, although unfortunately we have seen global numbers fall back almost every year since. Alas, the counts in 2013/14 confirmed this continuing trend, with only 20,797 counted in spring 2014 contrasting with 22,156 in the previous year. This reflected losses of c.640 birds at Wexford and c.450 on Islay, but a modest increase of c.400 in the rest of Ireland and total numbers elsewhere in Britain relatively similar to the previous spring.

In Britain, the count team detected 10,949 and 10,175 Greenland White-fronted Geese in autumn 2013 and spring 2014, respectively. The March 2014 counts included five in England, 33 in Wales (a worrying decline from 55 in the previous year) and 5,093 on the Inner Hebridean island of Islay. In Ireland, 11,064 and 10,622 were counted in autumn 2013 and spring 2014, respectively. The March 2014 counts included 8,100 at Wexford, but also 1,220 at Loughs Foyle and Swilly. Thanks to the amazing loyal network of counters, both volunteers and professionals, excellent coverage was achieved, so spring counts were only missing from 20 sites throughout the

winter quarters for which we substituted counts from dates close by.

Of course we know the reason for this depressing year-on-year decline. We have now frequently bemoaned the fact that, since the mid-1990s, the Greenland White-fronted Goose seems to have lost its knack of producing young, to the point where we wondered if we should start circulating material explaining to them about how to start a family!

Assessment of the proportions of young amongst the British wintering flocks in fact showed that after the 2013 summer they had performed rather better than in recent years. The average amongst all the flocks sampled was 14.2% first winter birds based on an excellent total sample of 6,833 aged, compared to 9.6% after summer 2012. Islay did well with 17.0% young amongst its number, which was even slightly above the average for 1962-2012 inclusive (14.0%). Elsewhere the percentage of first winter geese in flocks exceeded 10% at 14 out of 24 sites from which age ratios were received, which was far better than for several years. However, production of young in Ireland was disappointingly low, with just 6.9% on average (based on 5,378 aged individuals), including 6.8% at Wexford.

After very many years with lower production of young than in previous years, there will be fewer birds in all age classes, so although the percentages may be encouraging, the absolute numbers of young being brought back to the winter quarters in recent years will be very low compared the heydays of the 1980s.

Mitch Weegman finished and successfully defended his PhD at Exeter University (see Mitch's articles in *GooseNews* 11:6 and 12:8) in December 2014 and one of the chapters of his thesis shows that low reproductive success is linked to poor weather conditions in west Greenland. However, his analysis also showed that there was a cumulative adverse effect on reproduction of poor weather conditions experienced by individuals. This means that during the 1980s, when conditions on the breeding areas were good, individual geese bred successfully at relatively younger ages than recently, not just when conditions were favourable in a specific year, but when they had been favourable throughout adulthood. Basically, geese bred earlier in their lives during periods with a run of good summers. Since the mid-1990s, cohorts were exposed to a continuous sequence of poor

springs and so all tended to breed later in their lives or, indeed, never. Seen through our eyes, this confirms how helpless we all feel to be able to change the current circumstances in order to help the population recover. After all, it is far beyond our abilities to change the weather in west Greenland!

So whilst we must continue to manage their wintering habitats and reduce all avoidable sources of mortality, there is little active management we can do to combat the problem that is causing their poor reproductive success. As we write now in spring 2015, it has been one of the coldest and snowiest springs in Iceland, so after a couple of very mild years during spring staging there, the geese have also had a tough spring passage even before they get to Greenland and the nesting grounds. Let's hope they make up for this now they are in Greenland, although that seems rather unlikely as temperatures have been cold there too.

Most global change models do show stable or slightly decreasing temperatures in Iceland and west Greenland in stark contrast to rapid warming (especially in winter, but also in summer) in most parts of the Arctic. However, we must remember that the geese have proved very flexible in spring, bringing their departure dates forward from Ireland and Scotland, prolonging their stay in Iceland, but arriving in west Greenland at more or less the same time as they did in the 1860s.

All these bewildering environmental changes, as well as the birds' ability to cope with them, underline our need to continue to monitor the local abundance and age ratios amongst Greenland White-fronted Geese. We need these statistics more than ever before if we are ever to be able to unravel what is happening and how global change is affecting this remarkable bird. Thirty-two years may not be very long in evolutionary time, nor even compared to other biological monitoring time series. However, it has been long enough to give considerable insight into the population dynamics of the Greenland White-fronted Goose. Without the incredible contribution of our selfless band of goose counters, we would not be aware of the role that climate and the weather has in shaping their annual abundance. So please keep up the great work and let us hope for a change in the weather that brings a change of fortunes for the Greenland White-fronted Goose, if not this year then at some time in those ahead!



Photo: Ed Burrell

Poor year for European Whitefronts

Kees Koffijberg & Kane Brides

Relatively few European White-fronted Geese winter in the UK nowadays and, as is often the case, age ratio data from the UK, collected at WWT Slimbridge and RSPB Church Farm in Suffolk, showed a much higher percentage of first-winter birds (30.7%, 316 checked birds) than the flyway average. At Slimbridge, 143 birds were aged with 33 young (23%) present during the count, and a sample of 173 birds aged at Church Farm contained 64 young (37%). Interestingly, flocks assessed in Belgium also contained higher than average numbers of young (21.3%; n=941) and, although sample sizes there and in the UK are small, they show a pattern also observed in previous years that suggests that successful families tend to winter more along the western fringe of the wintering range.

The overall percentage of first-winter birds recorded during winter 2014/15 was 14.8%, representing a relatively poor breeding year compared to the long-term average (**Figure 3**). This estimate is based on a sample of 136,940 birds from the UK, Belgium, The Netherlands and the western part of Germany (the latter two countries providing the bulk of the data). Over the longer term, it is clear that from the early 1990s Whitefronts have returned with fewer and fewer offspring (**Figure 3**). Given that the flyway population size has stabilised since 2000/01, this pattern points at density-dependent factors occurring in the



Photo: James Lees / WWT

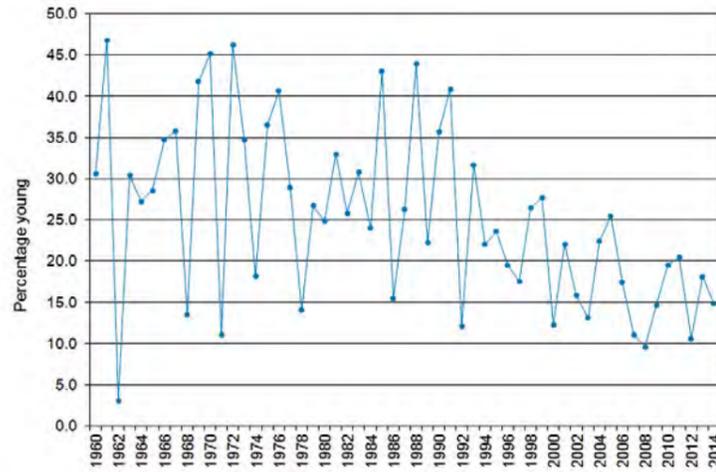


Figure 3. Long-term trend in breeding success of European White-fronted Geese, expressed as the percentage of juveniles recorded in the wintering areas. Mainly data from The Netherlands and Germany. Data: Sovon Vogelonderzoek Nederland.

breeding areas. Indeed, analyses show that the decline in breeding success has contributed much to the trend in flyway numbers recorded in the past 15 years (Jongejans *et al.* 2015. In press.)

Thanks go to Dave Paynter, Martin McGill (both WWT), David Thurlow (RSPB) and to observers in other countries for providing the age counts.

Reference

Jongejans E., B.A. Nolet, H. Schekkerman, K. Koffijberg & H. de Kroon. 2015. *Naar een effectief en verantwoord beheer van de in Nederland overwinterende populatie Kolganzen*. Sovon-rapport 2014/56, CAPS-rapport 2014/02. Sovon Vogelonderzoek Nederland, Nijmegen. In press.

Greenland Barnacle Geese wintering in Scotland in 2014/15

Carl Mitchell

Four coordinated counts of Greenland Barnacle Geese were undertaken on Islay, the most important wintering site in the UK, during winter 2014/15. These revealed 36,252 birds in November, 39,185 in December, 38,604 in January and 36,989 in March. The mean of these four counts was 37,758 birds, which represents a 8.5% decline compared to winter 2013/14 (41,259 geese). The continued decline was somewhat unexpected although breeding success in 2014 in east Greenland was again low (see below) and SNH continue to shoot birds on Islay (see Rae McKenzie's article on page 10).

Away from Islay, not all sites were counted in winter 2014/15, since complete coverage of all known wintering haunts is only checked once every five years as part of an internationally coordinated census (see *GooseNews* 12:9 for results of the census in 2013). However, a number of other key sites were checked and winter peak counts of 1,990 birds at South Walls, Orkney, 970 on Coll, 1,899 on Colonsay/Oronsay, 741 on Danna and 4,693 on Tiree were recorded. There were no dramatic increases in the number of birds at any of these winter resorts, suggesting that the decrease on Islay was real and not the result of birds moving to other key wintering sites.

Breeding success is measured annually on Islay and counts in 2014 revealed another poor breeding season. Just over 7,200 birds were aged and showed that 2.7% were young with a mean brood size of 1.4 young per successful pair. This is the second lowest level of breeding success since recording began in the late 1950s. In the last ten years, breeding success has been below 10% in eight years. On Tiree, a sample of 900 birds held 4.9% young and a mean brood size of 1.3 young per successful pair.

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



Photo: WWT

Poor breeding season for Svalbard Barnacle Geese

Larry Griffin

During what was another reasonably mild winter without extreme periods of frost or prolonged snow cover, good count consistency was obtained by the network of observers on the Solway and a population estimate of 37,300 was adopted for the 2014/15 winter. This figure is just 800 birds down on last winter's estimate of 38,100, suggesting that the population has slightly declined or stabilised. This is likely to be due to the poor 2014 breeding season; age counts on the Solway indicated just 5.0% young in the population, which was the worst breeding success in the last ten years. This was mirrored by the average family size, which was just 1.68 young per successful pair, the second lowest figure during the same period. Comparable values in 2013/14 were 7.0% young and broods of 1.98 young.

Good numbers of colour-rings can still be seen in this population even though an attempt to cannon-net them on bait at Caerlaverock this winter only produced Shelduck – nice birds all the same and honorary geese for the day! At RSPB Mersehead, a half day training session plus talk was organised to help guide observers already collecting good data on the ringed birds present in that area, to try and increase the amount of valuable associate data that can easily be collected alongside the ring sightings. For example, checking the focal bird for associates nearby can often give pairing information and, with a bit of practice and patience, very useful data on whether or not the pair bred successfully – important for assessments of lifetime reproductive success. Once you get your eye in, this process of assessing whether a bird has young or not can become very efficient so that the more interesting bit of trying to read the next ring in the flock is not unduly delayed.

Keen-eyed observers Val and Bob Smith have been

collecting ring observations in the Southerness area for the last three years at least and this winter turned up a real winner – orange ring 'ANS' on 27 November 2014 at West Preston (and seen again later in the winter). This bird was originally fitted with yellow ring 'SCX' in July 1986 during an early WWT expedition to Svalbard, and was recaptured in November 1999 at Caerlaverock when the old worn out ring was replaced with a shiny new orange one; a ring which is now looking old and worn out too. It was originally marked as an adult male during a moult roundup and so this bird will be at least 30 years old and possibly many more. This is, we believe, a longevity record for Barnacle Goose and during that time we know from its unique ring code that it has produced nearly 20 young, had at least three different mates, and has probably travelled a distance that would get it well on its way to the Moon; an incredible bird! Gavin Chambers of the RSPB also collected a second year's worth of ring observations with nearly 1,000 records this winter alone – a tremendous effort indeed.

At Caerlaverock, volunteer Rosie Rutherford also completed a similar feat and was to be seen out and about on the reserve in most weathers trying to get a glimpse of yet another old friend. The way these birds nip off to the wild rugged wastes of the Arctic yet come back to the same small field year after year always amazes and the visitors to Caerlaverock are always thrilled by the sight and stories of these birds.

Many thanks also for the sustained commitment of the census team including Mike Carrier, Bob Jones, David Charnock, Dave Blackledge, Rowena Flavelle, Paul Tarling, and Marian and Dave Rochester and thanks also to John Skilling for making himself available for the cannon-netting attempt and assessment.

Canadian Light-bellied Brent numbers fall again



Photo: WWT

Kendrew Colhoun, Graham McElwaine & Kerry Mackie

The 2014 autumn census was the 20th count coordinated by the Irish Brent Goose Research Group (IBGRG). Regrettably an autumn census could not be conducted in 2014 and, in an effort to keep the 'unknowns' to a minimum, the autumn survey in the wintering range was delayed to November – by which time the vast majority of birds would be expected to have moved south to Ireland or beyond. The total, generated from counts of an above average number of sites (and above-average effort) was just under 32,000 birds (31,985) and continues a downward trend of recent years, in no small part due to successive poor

breeding seasons (an average of 2.0% young for the period 2012–2014) following high productivity in 2011 of 25.0% (when the population count exceeded an all-time peak of 48,000 individuals). Breeding success in 2014 was 4.1%, with a mean brood size of 2.1 young per successful pair. A low but not disastrous figure was predicted given the presence of breeding adults and family units recorded in the northern parts of the breeding range by the University of Exeter and IBGRG teams present in Axel Heiberg and Ellesmere Islands, northern Canada, in June-August 2014 (see Kerry Mackie's article on page 6).

Successful season for Dark-bellied Brents

Kane Brides

The 2014 breeding season proved to be a better breeding year for Dark-bellied Brent Geese than in recent years, and followed an above-average year in 2013/14. Age assessments totalling 41,439 geese from 79 locations within 13 estuaries or coastal locations in the UK showed that wintering flocks held 23.0% young and that mean brood size was 2.76 young per successful pair.

Reports from monitoring stations in the breeding grounds in Arctic Russia indicate that rodent and predator abundance was relatively low in 2014, with Arctic Fox numbers dropping sharply. Together, these factors are likely to have positively influenced the success of the Dark-bellied Brent Geese during 2014 so it is expected that the whole population

experienced a successful breeding season.

The winter season of 2014/15 marked the 30th consecutive winter in which experienced volunteer observers assessed the breeding performance of UK wintering Dark-bellied Brent Geese. During the course of those 30 years, dedicated volunteers have aged more than 2,243,000 geese at numerous estuaries and coastal locations in the UK.

Our thanks go to all counters who provided age assessments of Dark-bellied Brent Geese during 2014/15. Many thanks also go to the dedicated network of GSMP volunteers who have enabled the annual breeding success of Dark-bellied Brent Geese wintering in the UK to have been calculated over the last 30 years. Your continued efforts are very much appreciated.



Photo: Richard Taylor-Jones / WWT

East Atlantic Light-bellied Brent Goose population update

Preben Clausen & Andrew Craggs

The East Atlantic flyway population of Light-bellied Brent Goose is subject to internationally coordinated count efforts in October, January and May. In October, breeding success is also assessed by counting juveniles in flocks and some further attempts to sample flocks are usually made later in the winter and /or spring. In October 2014, a population total count of 7,287 birds was recorded, with 2,200 birds at Lindisfarne and the rest scattered at sites in Denmark. The October 2014 Wetland Bird Survey counts from the remaining UK sites are not yet available to us, but numbers of birds outside Lindisfarne this early in autumn are usually counted in tens, and the same is the case for Norway. We therefore estimate the East Atlantic population at 7,300 birds in the 2014/15 wintering season (**Figure 4**).

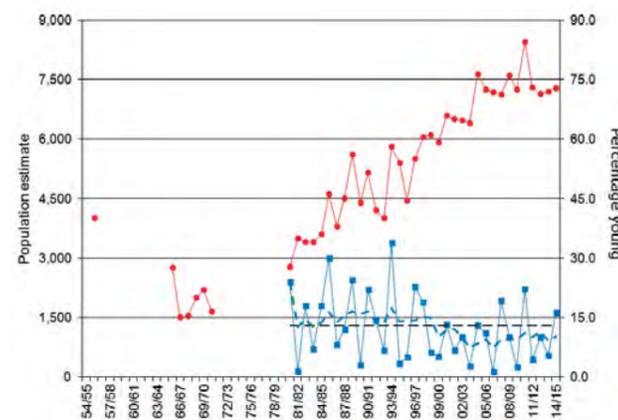


Figure 4. Population size of East Atlantic Light-bellied Brent Geese, 1956/57–2014/15 (red circles), and the proportion of young in flocks since 1980/81 (blue squares). The dashed blue line shows breeding success (% young) as a six-year running mean, whereas the dashed black line shows the estimated mortality in the population (from Clausen *et al.* 1998, 2001). The population was protected from shooting in the UK in 1954, on Svalbard in 1955, in Norway in 1971 and in Denmark in 1972.

At Lindisfarne, age samples were not carried out in October (flocks were generally too far away), but in Denmark a total of 895 birds was aged, and these contained 16.2% goslings (**Figure 4**) with 2.19 goslings per successful pair ($n=19$). Later in the winter, two samples from Lindisfarne showed 11.5% goslings (among 52 birds on 26 January) and 6.4% goslings (among 249 birds on 2 February), respectively. At Nairn in Scotland, two small samples also held low proportions of juveniles, with 5.5% goslings (among 55 birds on 9 January) and 5.0% goslings (among 20 birds on 2 March), respectively.

Combining the UK February and March samples with a sample from two Danish sites visited in early March (318 birds, 11.0% juveniles), revealed a post-winter overall juvenile percentage of 8.9%. The decline from 16.2% in October to 8.9% in February–March is statistically significant, *i.e.* almost half of the goslings, some 576 birds, may have died over winter. It is, however, known that family groups tend to cluster together soon after the autumn migration, and we may have overestimated the juvenile percentage in October or alternatively underestimated it in February/March.

To confirm this we will have to wait for the October 2015 count before obtaining an alternative mortality estimate, based on apparent survival rates, where we contrast the number of adults in early autumn with the previous season's total population size (*i.e.* birds that are missing have probably died). Such calculations are also made on an annual basis (following methods and using formulae given by Clausen *et al.* 1998), and this is where the worrying part of this story begins. In 1998, we estimated average annual recruitment at 14.5% juveniles and apparent mortality rate at 12.7% in 1980/81–1994/95, leading to the potential for a 1.8% positive growth rate per annum (Clausen *et al.* 1998). However, during the last ten seasons (2005/06–2014/15), the average recruitment rate has been 10.3% juveniles, and the apparent mortality rate has been 10.8%, *i.e.* leading to a current annual growth rate of -0.5%.

The slightly lower recent mortality rate probably reflects the geese having experienced fewer severe and more milder winters during the most recent ten years, compared to the first fifteen, whereas the reasons for the lower breeding success is not fully understood but may be explained by observed phenological mismatches in Svalbard (Clausen & Clausen 2013), or perhaps increased competition with Barnacle Geese in Svalbard or observed longer flight distances to the breeding grounds. The two latter hypotheses are subject to current analysis.

Thanks to contributors to age-sampling: Derek Forshaw, Simon Foster, Henrik Haaning Nielsen, Keld Henriksen, Jens Peder Hounisen and Kevin Clausen.

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Recent success with capture and marking

Kane Brides & Graham McElwaine

WWT's Head of Media, Sacha Dench and Kane Brides from the Monitoring Unit travelled to Iceland in August 2014 to assist Sverrir Thorstensen with the annual ringing of Whooper Swans. The trio travelled within the study area of Bárðardalur, close to Lake Mývatn, to capture families and non-breeding Whooper Swans. During the expedition 116 swans were caught, including 35 cygnets.

Interestingly, prior to the trip, Sverrir had spotted a Whooper Swan he had ringed as a cygnet at Engivatn in northern Iceland in 1986, making it the oldest known individual since this study began. Marked with yellow ring BXN, the swan had gone unnoticed until it was re-captured in 2013, and at 28 years old this bird also breaks the known longevity record for the species. **STOP PRESS – BXN has been sighted back in Iceland in 2015, now in its 29th year!**

On the wintering grounds, annual catches at WWT centres took place with 82 Whooper Swans caught at WWT Caerlaverock in Dumfriesshire, 60 Whooper Swans caught at WWT Martin Mere in Lancashire and ten at WWT Welney in Norfolk.

At the time of writing, sightings of Whooper Swans from winter 2014/15 number 12,391 records of 664 individuals, received from 111 observers. The database, managed by WWT, now holds 925,492 colour-ring sightings, gathered by over 1,000 observers since the start of the study in 1980.

Targeted efforts to catch and ring Bewick's Swans on the Ouse Washes as part of a GPS tracking study were carried out during the winter (see Eileen Rees' article on page 30). Several cannon net catches allowed a good number of birds to be marked with GPS tracking devices whilst also adding more colour-marked birds to the population. Our thanks go to staff at WWT Welney for their help with access to the catch sites and to Mike Reed for his help and assistance during these catches.

We're also extremely grateful for the long-term dedication of volunteers Steve Heaven and Alison Bloor at WWT Slimbridge, Ailsa Hurst, David and Estelle Walsh at WWT Martin Mere and Sheila Stubbs at WWT Caerlaverock for their help in compiling sightings of colour-marked Whooper and Bewick's Swans throughout the winter.

Although no catches of Pink-footed Geese took place during the last year, a good number of resightings were sent in to WWT of birds caught in recent catches in Iceland and Scotland. It is well worth scanning flocks of Pink-footed Geese for colour-marked birds and recording the flock size and other details (see Carl Mitchell's article on page 28).

The highlight of the past year was undoubtedly the joint University of Exeter/Irish Brent Goose Research Group (IBGRG) visit to the breeding grounds on Axel Heiberg Island in Canada last summer, the first expedition to be mounted there since 2007



(see Kerry Mackie's article on page 6). In total, 183 Light-bellied Brent Geese were caught, herded by helicopter whilst flightless and much additional information was gained on the breeding biology of the species.

Despite considerable effort, only three small autumn catches were achieved at Strangford Lough involving a total of only 24 Brent Geese, reflecting the difficulty and patience required for these early inter-tidal attempts. Following on from a good catch of 31 geese on grass at a new location, at Rogerstown Estuary, just north of Dublin, in early March 2015, a further 47 were ringed at the regular site of the public park at Portmarnock, also County Dublin. A flurry of catches followed in late March, starting with a disappointing three netted on the foreshore at Carlingford Lough in County Louth. Three frustrating days of playing cat and mouse with birds in fields at Dundrum, County Down, followed, eventually rewarded when 60 geese were caught at dusk. This catch was particularly pleasing as it involved the recapture/ring renewal of eight birds with very old rings, which had been getting difficult to read in the field. Back to the salt-marshes at North Bull, Dublin, a big catch of 84 geese was achieved. Finally, a single bird was also caught in a Dublin park.

A joint team of University of Exeter, IBGRG and Icelandic colleagues also managed seven catches in Iceland in May 2015, with a total of 123 Brent Geese caught and ringed.

At the time of writing, sightings of marked Light-bellied Brent Geese in 2014/15 number 11,937 records of 1,744 individuals, received from 183 observers. This level of surveillance is remarkably consistent with 2013/14. Ring-reading by the usual IBGRG team in Iceland during the recent staging period was hampered by the lack of new grass, caused by a bad winter and cold spring.

Many thanks go to the canon-netters, Stuart Bearhop, Kerry Mackie, Alan Lauder and Alyn Walsh, and to all the support teams of volunteer helpers and ring-readers in Ireland, Iceland and further afield.

Conservation and research news

Recording feeding geese and swans

Carl Mitchell

WWT have been collecting and collating records of feeding geese and swans for a number of years and some of the results have been published in reports that are now available on a new dedicated section of our monitoring website (<http://monitoring.wwt.org.uk/our-work/goose-swan-monitoring-programme/feeding-distributions/>). Counts of feeding geese or swans provide valuable information on the distribution of these species in the wider landscape and are particularly valuable for the identification of key areas in relation to possible extensions to protected areas, for locating birds when counts at roost are not possible, and for planning purposes, particularly when considering the location of developments such as wind turbines.

Many counts of feeding flocks come from counts undertaken for other reasons, such as age ratio counts or searches for marked birds. These data, including flock size, remain as valuable as ever so please do continue to submit these to us in the usual ways. Other records of feeding geese and swans that simply involve a location, date and count are best uploaded to BirdTrack (<http://app.bto.org/birdtrack/main/data-home.jsp>), but please note that as it is currently not a requirement of BirdTrack to record whether the birds were on the ground or flying over we currently cannot separate these categories for most existing records (see **Figure 5**). Therefore, your observations of feeding birds can be made much more valuable to us if you record whether the birds were on the ground or not. This can be recorded under the 'optional' tab/Activity then choose 'feeding' from the drop down list. Adding this information would be much appreciated by the monitoring team at WWT.

Our understanding of the distribution of geese and swans in the wider landscape is growing, but the situation is dynamic and keeping tabs on where the species are feeding requires regular surveillance. Whilst there are currently no systematic surveys to monitor changes in feeding distribution, WWT is exploring options for this around key designated sites.

A big thank you to all observers, especially GSMP counters who have provided information on feeding geese and swans, either through sightings of ringed birds or by recording the location of flocks through BirdTrack.



Figure 5. Blue symbols show the records of flocks of feeding Pink-footed Geese in England and Wales. Grey symbols are records where it was not recorded if the geese were on the ground or flying over.

Photo: John Anderson



Lead poisoning from lead ammunition: global policy update

Julia Newth & Ruth Cromie

Lead poisoning, through the ingestion of spent lead gunshot, represents an ongoing 'One Health' issue as it affects human, domestic animal, wildlife and environmental health. As a highly toxic heavy metal that acts as a non-specific poison, it remains an important cause of morbidity and mortality in waterbirds globally where lead gunshot is used (see also *GooseNews* 12:4). Waterbirds are commonly poisoned following the ingestion of spent lead shot, either inadvertently or when mistaken for food particles or grit which is retained in the muscular gizzard to aid mechanical breakdown of food. Once in the gizzard, the pellets are ground into smaller particles and toxic lead salts absorbed into the bloodstream. Birds feeding in wetland or terrestrial areas shot over with lead ammunition are therefore susceptible to lead exposure, ingestion and poisoning.

Migratory Waterbirds (AEWA). However, partial restrictions have proven to be ineffective due to poor compliance and because birds often feed and ingest lead in areas where restrictions do not apply. It is widely believed – and has been demonstrated in several countries – that the replacement of lead shot with non-toxic alternatives for shooting across all habitats represents the most practical and effective solution. Non-toxic alternatives are generally widely available and provide a viable alternative.

The Preventing Poisoning Working Group of the UNEP Convention on the Conservation of Migratory Species (CMS) has recently drafted an ecological review detailing the risks of lead ammunition to migratory birds. In November 2014, the 120 Contracting Parties of the UNEP-CMS adopted Resolution 11.15 'Preventing Poisoning of Migratory Birds' and its accompanying Guidelines. The Guidelines include a three-year timetable to phase out lead ammunition in all habitats by 2017. Under the Resolution, Parties are given the flexibility to determine their own implementation of the Guidelines. However, the intent of the Resolution is clear in that Parties with significant poisoning risks in their territories should follow the Guidelines. This is the first time that lead ammunition has been highlighted as an issue on a global stage, in all habitats.

The Resolution can be found at <http://www.unep-aewa.org/en/document/unepcms-resolution-1115-preventing-poisoning-migratory-birds-0> and the Guidelines and ecological review can be found at <http://www.cms.int/en/document/review-and-guidelines-prevent-poisoning-migratory-birds>

1 Information about 'One Health' can be found at <http://www.onehealthglobal.net/what-is-one-health/>

‘ The Guidelines include a timetable to phase out lead ammunition in all habitats by 2017. ’

The risk to birds from poisoning from lead gunshot has led to many countries imposing legislative restrictions on its use. In Europe, legislation has largely resulted from a request for the phasing out of lead shot over wetlands within the Action Plan, and subsequent Resolutions, of the Agreement on the Conservation of African-Eurasian

Swan Specialist Group newsletter

Swan news is the newsletter of the Wetlands International / IUCN SSC Swan Specialist Group (SSG).

The SSG newsletter was first produced in the late 1980s, with ten editions published between 1987 and 2004. The idea to rejuvenate the newsletter was raised at the 5th International Swan Symposium, held in Maryland, USA, in February 2014, and thus the latest and revamped edition (*Swan news* no. 11) was published in May 2015.

Swan news no. 11 is available to download from the Wetlands International website at <http://www.wetlands.org/Aboutus/Networks,partnersanddonors/Networkofspecialists/SwanSpecialistGroup/tabid/198/Default.aspx>.

Any comments and/or contributions for future issues of *Swan news* should be sent to the Editor, Carl Mitchell (mitch@silverstar.com) – please note, this is a different Carl Mitchell to our *GooseNews* Editor!



Tracking Bewick's Swan migration: 2015 update

Eileen Rees, Larry Griffin & Baz Hughes

Following the deployment of GPS/GSM loggers on eight Bewick's Swans caught on the Ouse Washes in winter 2013/14 (see *GooseNews* 13:6), a further 14 swans were caught and fitted with loggers on the Ouse Washes (ten birds) and at Slimbridge (four birds) in winter 2014/15, for a WWT study tracking the swans' migration in relation to wind farm sites. The new loggers gave detailed (hourly) location data, which provided precise information on their movements across the North Sea, notably in relation to offshore wind farms proposed or in development between southeast England and continental Europe.

Additionally, four of the original eight swans with the most functional tags returned with loggers that still worked, and these provided not only further information on movements in relation to wind farms but an insight into their summer haunts in the Russian arctic.

Two of these birds were in Novaya Zemlya in early September and two others on the coastal tundra of European Russia (**Figure 6**). One individual (called 'Lech' – green track in **Figure 6**) followed a more south-easterly route – in spring and autumn – through Poland and Russia than the usual well-described migration along the Baltic coast and across Karelia to the White Sea.



Figure 6. Year round migration (to December 2014) for four Bewick's Swans named 'Andres' (yellow), 'Eileen' (pink), 'Hope' (orange) and 'Lech' (green) tracked in spring and autumn 2014.

Analyses of the swans' tracks in relation to wind farm locations will be undertaken shortly, with a view to providing a final report to the Department of Energy and Climate Change (DECC) by the end of 2015 to inform DECC's Offshore Energy Strategic Environmental Assessment (SEA) programme.

GSMP data support major European assessments

Richard Hearn

This year has seen the publication of several important European-wide assessments on bird status and conservation activities. Waterbird monitoring data, including from the GSMP, have supported all of these, highlighting the crucial role GSMP counters play in helping to identify species conservation and management priorities.

The first of these is the new European Red List of Birds, compiled by BirdLife International, the first time IUCN Red List criteria have been applied to all European birds. Whilst it found that all goose species occurring in the UK qualify as Least Concern, as their numbers are generally increasing, Bewick's Swan is classified as Endangered on account of the decline in numbers that has occurred since the mid-1990s. The full report can be found at <http://www.birdlife.org/europe-and-central-asia/european-red-list-birds-0>.

Also completed recently was the latest report from the UK to the European Commission on the implementation of the Birds Directive, the so-called Article 12 report. The report covers the status of birds and details of the pressures and threats they face as well as the conservation measures being undertaken. It was compiled by a large consortium of governmental and non-governmental stakeholders, coordinated by

JNCC, the co-funder of GSMP, and is of great importance for setting the direction of future conservation policies and activities at an EU level. The UK report, as well as those from other EU Members, can be found within a species-focused searchable report at <http://bd.eionet.europa.eu/article12/summary>. This Article 12 reporting, along with Article 17 reporting on the Habitat's Directive, has also been summarised in the European Union's *State of Nature* report which can be found at <http://bd.eionet.europa.eu/activities/Reporting/Introduction>.

Finally, with the next Meeting of Parties to the African-Eurasian Waterbird Agreement (AEWA) taking place later in 2015, Wetlands International has produced the latest Conservation Status Report for AEWA. As part of this process, updated population estimates are produced which underpin the assessment of nationally and internationally important wetlands for waterbirds (e.g. through the Ramsar Convention). The latest population estimates can be found at <http://wpe.wetlands.org/>.

As always, we are very grateful for the continued support of GSMP counters to the monitoring scheme itself and these wider applications of the data.

New guidelines for sustainable harvest management

Richard Hearn

Several goose populations found in the UK are hunted there and/or elsewhere in their flyways, and some protected species that cannot be generally hunted are controlled under licence to reduce conflict, primarily with agriculture.

The African-Eurasian Waterbird Agreement (AEWA), to which the UK is a Party, recognises harvesting as a legitimate form of use of migratory waterbirds. The Agreement also requires that any harvesting of waterbirds is sustainable, such that populations are maintained in a 'favourable' conservation status over their entire range. Similar requirements are also found in the EU Birds Directive.

Due to the cross-border movements of the majority of migratory waterbird populations within Europe, international cooperation is required in order to ensure that national hunting legislation, regulations and practices implement the principle of sustainable use, both individually and collectively, and that any harvest of waterbirds is based on robust flyway-wide assessments of conservation status and total harvest. GSMP and other waterbird monitoring schemes provide the biological data needed to sustainably manage huntable geese, but, with one exception, there are no coordinated systems in place for collating harvest information, which prevents an assessment of the sustainability of waterbird harvests. The only operational example in Europe is for the management of Svalbard Pink-footed Goose – see <http://pinkfootedgoose.aewa.info/>.

New guidelines for the EC, entitled *Towards sustainable management of huntable migratory waterbirds in Europe*¹, were published in early 2015, and others on the sustainable management of huntable waterbirds are under development for the whole AEWA region.

These guidelines build on the experiences and expertise developed in North America, and through the management of Svalbard Pinkfeet, to provide guidance on the development and implementation of sustainable management practices for all huntable waterbirds, particularly the use of adaptive management. They demonstrate that in most cases, and particularly for European goose populations, the biological data and

management tools exist. What are needed are the flyway-scale harvest data, the stakeholder involvement, and the coordination and decision-making mechanisms, as well as iterative learning to underpin the whole process.

Given the current and increasing scale of environmental change, the need for sustainable harvest management has never been more timely and it is hoped that these guidelines stimulate a response from all stakeholders to fully support the development of structures to implement the principles of wise use for huntable geese and other waterbirds.

¹ Available at <http://www.wetlands.org/WatchRead/Currentpublications/tabid/56/mod/1570/articleType/ArticleView/articleId/3709/Default.aspx>

Goose Specialist Group news

The 16th meeting of the Wetlands International / IUCN SSC Goose Specialist Group (GSG) was held in November 2014 in Beijing, China. Over 160 delegates attended from 15 countries, with presentations covering global change and anthropogenic impacts on wild goose populations, goose ecology, and goose eco-physiology, disease, parasites and contaminants. The conference was followed by a fieldtrip to Poyang Lake, China's largest freshwater lake, where the participants observations included four different crane species (Siberian, White-naped, Hooded and Eurasian), several thousand Eastern Tundra Bean Geese, over 10,000 Bewick's Swans, thousands of Oriental Storks and tens of thousands of Little Grebes. Further highlights from the conference can be found on the GSG website (<http://www.geese.org/gsg/>).

The next meeting is due to be held in Salekhard, Russia in November/December 2015, in association with the Russia Goose, Swan and Duck Study Group of Northern Eurasia. Further details are available on the conference website at <http://onlinereg.ru/Salekhard2015>.

Goose Bulletin is the official newsletter of the GSG and is available to download from the GSG website. Contributions for *Goose Bulletin* are welcomed from all interested goose researchers and should be sent to the Editor-in-chief, Johan Mooij (johan.mooij@bskw.de).

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 Carl Mitchell (see back cover for contact details).

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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.

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

Cover photograph by WWT

Designed and typeset by Jigsaw Design & Publishing, Norwich.

Printed by Swallowtail Print, Norwich.

Printed on Elemental Chlorine Free paper primarily manufactured from 100% de-inked post-consumer waste.

Published by WWT, Slimbridge, Gloucestershire GL2 7BT, UK. Wildfowl & Wetlands Trust (WWT) registered charity in England & Wales, no. 1030884, and Scotland, no SC039410
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Goose & Swan Monitoring