

**Call for 41<sup>th</sup> international Bewick's Swan age count 17/18 December 2022  
And results of the 40<sup>th</sup> international age  
count: 11-12 December 2021**



**Wim Tijssen, Kees Koffijberg and Preben Clausen**

*This synchronous international survey is part of the long-term monitoring scheme coordinated by the Swan Specialist Group, in order to assess annual productivity in the species. In 2021, the 40<sup>th</sup> age count was held in the weekend of 11-12 December. Data were received from eight countries and resulted in 11.0% juveniles. This is 2% higher than in 2020, but still below the level that would be required to compensate for annual mortality. We hope that all countries, coordinators and observers will continue their contribution in this year's 41<sup>th</sup> age count in this long term study to keep track on the wintering NW-European Bewick's Swans.*

### **2022 Age count**

This year's International age count will take place in the weekend of **17-18 December 2022**. In most countries, this date also fits in the scheduled monthly waterbird count. Usually, by this time of the year, there is some information from the breeding areas. But, due to the international conflict between Russia and Ukraine and also because of the Covid-pandemic, field expeditions in the breeding area were not possible last summer. At least, reports of weather stations suggest that weather conditions in many parts of the Arctic were very warm. And the first impressions from arriving swan flocks in NW-Europe, and along the flyway, indicate an intermediate breeding season. Juvenile percentages for other arctic species such as Dark-bellied Brent Goose, Tundra Bean Goose and Greater White-fronted Goose even show pretty high values and suggest good breeding conditions. Hopefully the survey in December will point out what has been going on in the declining Bewick's Swan population. We hope that all coordinators and organisations will continue their efforts in collecting these important data, which helps to understand the fluctuations and changes in the flyway population. We are very grateful to all those observers, coordinators and institutes for their efforts. The excel-sheet to collect the data for the international age count will be sent in a separate email to all coordinators.

### **Results from 2021 age counts**

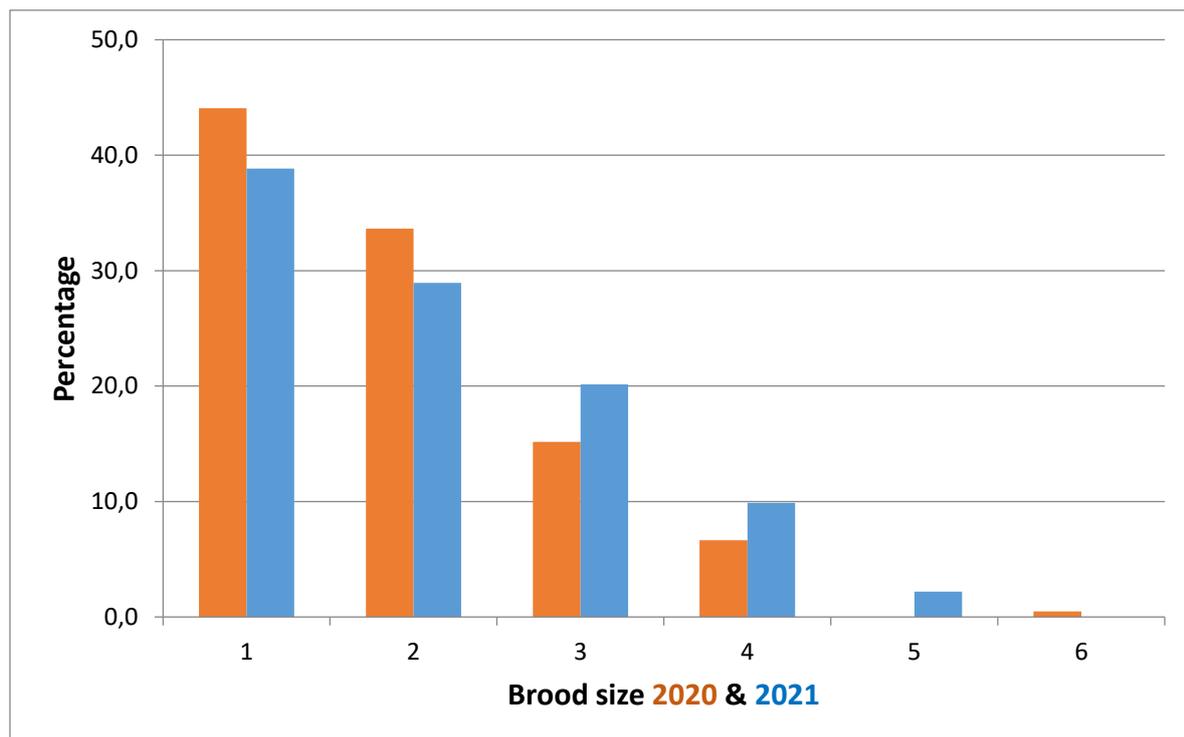
In December 2021, a total of 10,224 Bewick's Swans was aged, which is a much larger sample (+8%) as in 2020 (Table 1). According to the latest results of the flyway population in January 2020 (Eileen Rees – in prep.) it means that we managed to check about 80% of the NW-European wintering population! The overall percentage of cygnets recorded was 11.0% in 2021 (compared to 8.3% in 2020). This is the highest juvenile count since 2013 (see below). Both winters were categorised as being very mild during the Mid-December counting period, although a cold spell was noticed in countries like Estonia, Lithuania and Latvia, where no birds were counted at all (cold spell in Poland as well, but still birds present, see below). Arrivals at the main wintering sites were rather late, which is more and more common due to the milder winters in NW-Europe (Nuijten et al. 2020) and which has been a driver for the meanwhile well-known north-eastward shift in the core wintering areas and increasingly large concentrations in Germany.

Between countries, we see some variation in the number of cygnets recorded (especially in 2020), which makes it clear why such a census is only working sufficiently when carried out at a flyway scale. Especially the Netherlands hold very low percentages of juveniles due to the fact that the majority of the birds feed aquatically on submerged vegetation like *Chara* and *Potamogeton* on the Border Lakes and fewer successful broods are joining such flocks. Furthermore, there is a tendency that in the extremes of the wintering range, in France, Belgium and nowadays also UK, the juvenile percentage is

higher. Even if sample size is small in these countries, it fits well in a pattern that also has been observed in other species (e.g. Gupte et al. 2018).

**Table 1.** Summary of Bewick's Swan age counts recorded in each country during 12–13 December 2020 and 11–12 December 2021.

Country	Total no. of birds aged in 2020	Total no. of birds aged in 2021	No. of adults in 2020	No. of adults in 2021	No. of cygnets in 2020	No. of cygnets in 2021	% cygnets in 2020	% cygnets in 2021
France	264	252	240	218	24	34	8.7	13.5
Belgium	101	39	75	31	26	8	25.7	20.5
Netherlands	2,836	2,924	2,690	2,724	146	170	5.1	5.8
UK	480	253	430	201	50	52	12.8	20.5
Germany	2,725	4,709	2,444	4,067	281	642	10.3	13.6
Poland	1,321	995	1,194	875	127	120	9.6	12.1
Denmark	1,465	1,052	1,360	956	105	96	7.7	9.1
Latvia	0	0	0	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0	0
Estonia	5	0	4	0	1	0	20.0	0
<b>TOTAL</b>	<b>9,197</b>	<b>10,224</b>	<b>8,437</b>	<b>9,072</b>	<b>760</b>	<b>1,122</b>	<b>8.3</b>	<b>11.0</b>



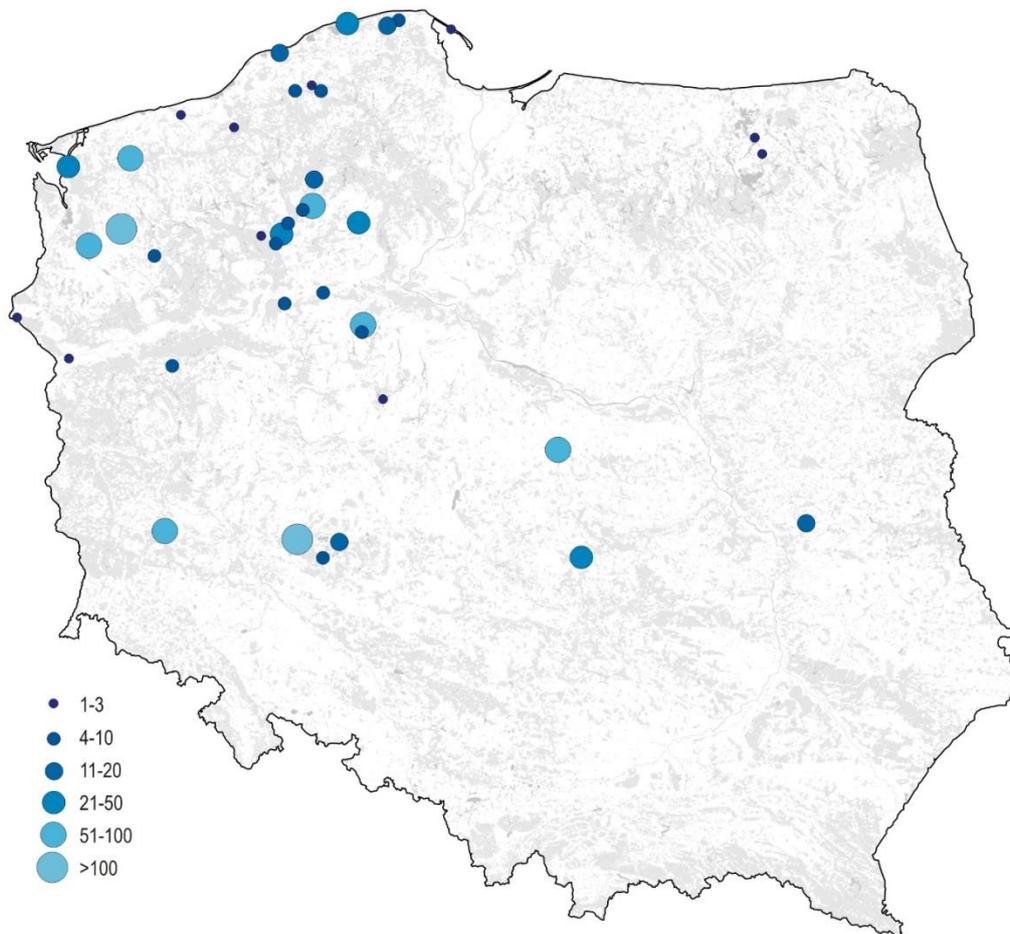
**Figure 1.** Brood size (number of pairs with 1 cygnet, 2 cygnets, etc.) in 2020 and 2021.

In addition to the percentage of cygnets in the wintering flocks, many observers also reported on brood sizes, *i.e.* the number of cygnets recorded in each successful family. We received information from 273 pairs with cygnets from eight countries, which is much more as in 2020 (+29%), when we got information from 211 successful pairs. The average brood size in 2021 was 2.08 young/pair, *i.e.* 12% higher as in 2020 (average brood size 1.86). In 2021, there were obviously more families with 3 and 4 cygnets compared to 2020 (Figure 1). Even 6 pairs were accompanied with 5 cygnets. These large broods fit in the pattern for a better breeding year 2021. We would like to emphasize that collecting

brood size data is an important part of the count, as it enables further investigations in that part of the population which is actually breeding. Flocks of Bewick's Swans are usually less 'compact' compared to many goose species, so separating broods is normally not too difficult.

Poland (by Przemek Wylegala)

As a result of the eastward shift in wintering sites, Poland has become increasingly important for wintering Bewick's Swans. Although not the whole country is covered into all edges, numbers in Poland nowadays represent about at least 8% of the flyway population. The age count is coordinated by Przemek Wylegala and his team of observers. Overall numbers were a bit lower in December 2021, due to a cold spell around the counting period. The majority of the birds is more or less wintering in the western and central parts of the country (Figure 2).



**Figure 2:** Wintering sites of Bewick's Swans in Poland during the brood count of 11/12 December 2021 (data Przemek Wylegala).

Denmark (by Preben Clausen)

In Denmark the December count of Bewick's Swan is not part of the formal waterbird monitoring schemes, but was undertaken to second the annual assessment of productivity of the Bewick's Swans. In southern Jutland there is an ongoing monthly volunteer organized count, that is an extension of the German counts in Schleswig-Holstein, organized by Hans-Joachim Augst. In December 2021, Jesper Tofft from the local Danish group organized a more comprehensive count in the region, combining age-assessments with counts of individuals from feeding or night-roosts, to come up with a proper regional total. For the rest of Denmark a public call was made on

DOFbasen.dk, announcing the count and encouraging observers to be accurate in recording their observations, contributing with age assessments and habitat use data.

The combined dataset from southern Jutland and the rest of Denmark was analysed using the same standard protocol, as we do in the January, March and November counts conducted under NOVANA – the National Monitoring and Assessment Program for the Aquatic and Terrestrial Environment of Denmark. This program currently involves annual midwinter counts (contributing to the International Waterbird Census), and counts every second year in March (even years) and November (uneven years) (Holm et al. 2021).

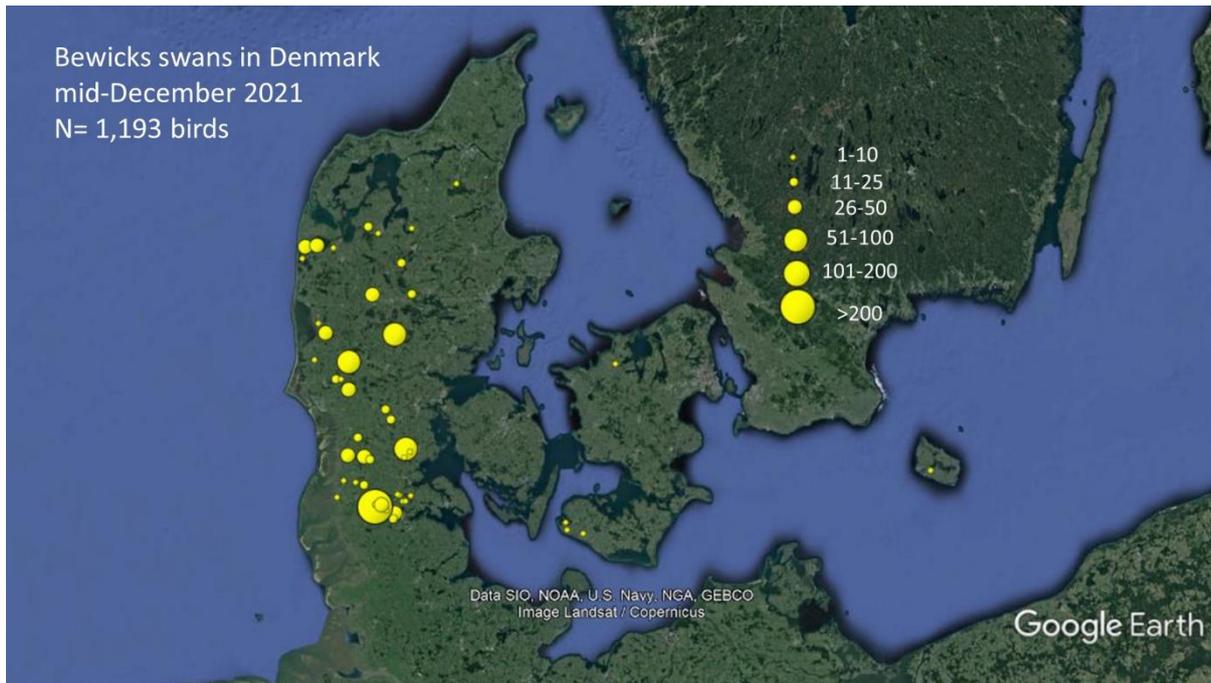
In total 1,193 Bewick's Swans were counted, whose distribution is given in Figure 3 below. Of these 1,052 birds were aged and included 96 juveniles, thus 9.1 % cygnets (Table 1). In total 26 broods were recorded, ranging from 1 to 4 cygnets with an average of 1.92 cygnets per pair (Table 2).



*Bewick's Swans in shallow wet grassland reflecting the milder winters in NW-Europe; December 2021 in Denmark – Picture Aage Matthiesen*

**Table 2.** Brood size data in Denmark 2021.

Brood counts \	Brood sizes	1	2	3	4	5	Sum
No. of broods:		9	12	3	2	0	26
No. of cygnets		9	24	9	8	0	50
<b>Cygnets/brood :</b>							<b>1.92</b>



**Figure 3.** *Bewick's Swans in Denmark concentrate in the SW-part of the mainland, close to the German border.*

#### **Germany with above-average percentage of cygnets (by Nikolas Prior & Johannes Wahl)**

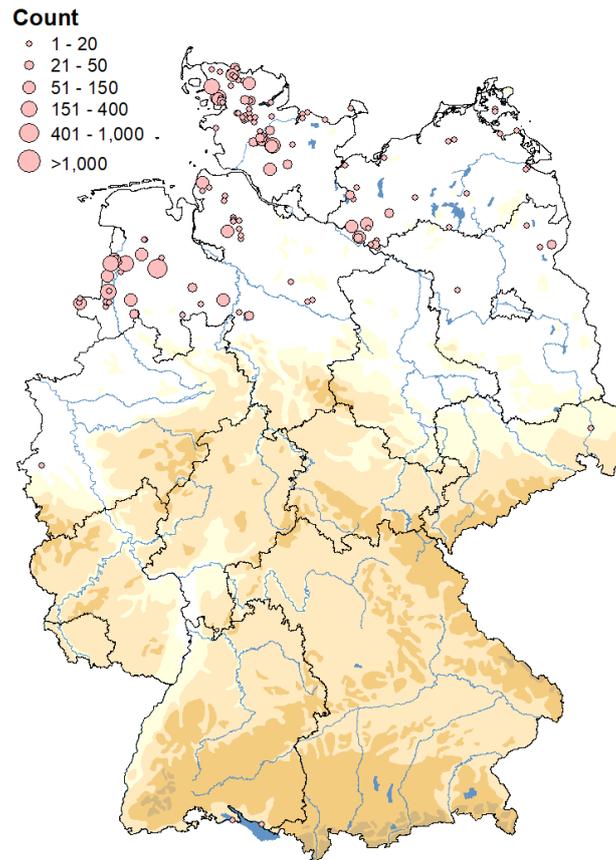
The age count showed a percentage of 13.6% juvenile Bewick's Swans around 11/12 December 2021, which is by far the highest percentage of cygnets recorded in Germany since 2013 (14.4%). On average for this period, the percentage in Germany was 10.2 % and in Europe 8.9 % (cf. Figure 5). Since 2013, the DDA has been involved in the census of the annual breeding success of the Bewick's Swans wintering in northwestern Europe due to the increasing resting population in early winter.

In December 2021, a total of 4,739 Bewick's was counted, of which 4,709 birds were aged. Of these, 2,449 individuals were recorded in Lower Saxony alone, 1,650 in Schleswig-Holstein and 558 in Mecklenburg-Western Pomerania. Thanks to the well-established network of volunteer counters, it is likely that a very large proportion of the population present has been covered with the count. We estimate the total resting population for early December 2021 to be at least 4,800 individuals. This number may also have benefited from some birds crossing the border from Denmark and some influx from Poland, due to a cold spell prior to the count.

During the census weekend, brood size could be determined for 139 families. Most of the successful pairs had one to three cygnets "in tow". But families with four or five cygnets could be observed as well. The average number of juveniles per family was 2.1.

**Note:** In order to learn more about the population decline of the Bewick's Swan and to meet Germany's special responsibility for this species, the project "Bewick's Swan: Conservation Concept for a Threatened Migratory Bird Species in Germany" was launched in November 2020.

To learn more, visit: <https://zwerorschwan.de/>



**Figure 4.** In Germany, Bewick's Swans winter mainly in the northern states. Only a few can also be found further south up to Lake Constance (map shows data from the age count December 2021).



*Bewick swans in flight – Picture Hans-Joachim Augst*

## Other countries

In France, the birds use lakes with pondweeds in the north-eastern parts of the country and very few small flocks migrate to the south in the Camargue area, which is counted with a small plane by Fabrice Passeri. This is the most southern wintering site for the swans in NW-Europe.



*Bewick's swans in the Camarque, counted by plane – Picture Fabrice Passeri (Camargue Gardoise)*

In the Netherlands, the majority of the birds was found on the Border Lakes between mainland and polders of Flevoland and on the east side of Lake IJsselmeer. These regions, with swans feeding aquatically, usually have low percentages of juveniles, in this case 4% on 1,800 birds. Wintering numbers in the Netherlands, which used to be the main wintering country for the Bewick's Swans, are steadily decreasing (preliminary data point at 3,600 individuals for December 2021). The UK reported the lowest numbers ever, since the start of the brood counts. Birds were recorded in the Ouse and Nene Washes (115), in Slimbridge (64) and very few in Kent.

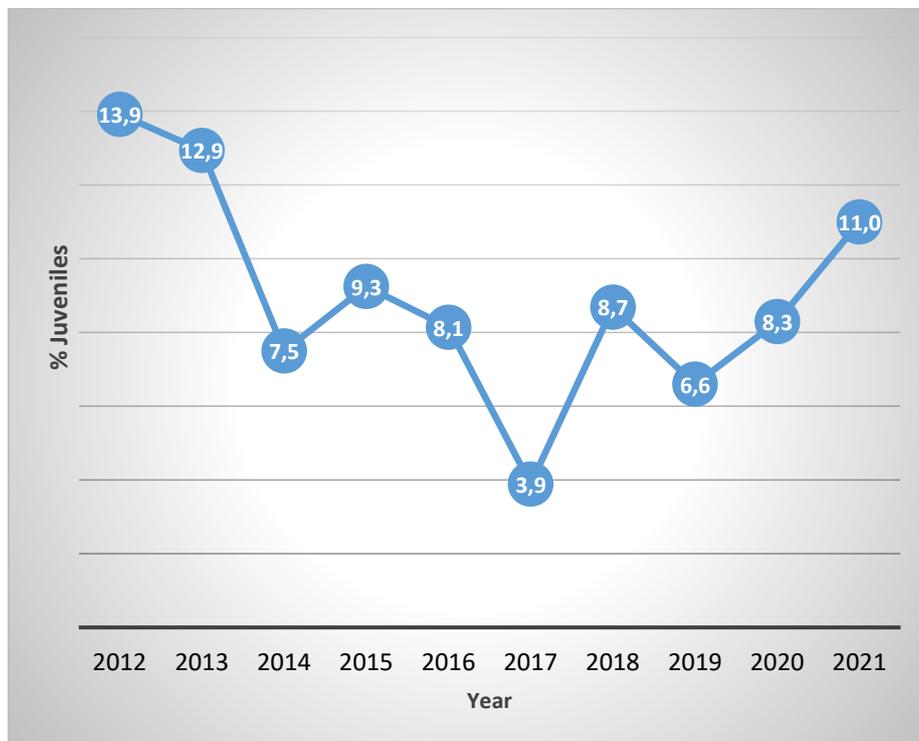
## Breeding success – long term

Breeding success over the past 10 years has been rather poor; on average 8.9% juvenile birds were found in the population over this period (Figure 5). Results in 2021 were slightly (2%) above this average. As a result of the low productivity, and in combination with an apparent adult mortality of 15–23% per year (Wood *et al.* 2018), the population size has declined since 1995. Although the annual five-year-count in 2015 showed a little increase up to 20,100 birds, the latest figure from the 2020-census showed a steep decline up to 12.900 birds(Rees in prep.) in January 2020. Even if our age counts do not cover the entire flyway population, we are very pleased that we have been able to monitor a substantial part of the NW European Bewick's Swans population every year since 1982! And, especially in this anniversary year of the 40<sup>th</sup> brood count, we managed all together to monitor roughly up to 80% of the NW-European population according to the latest results of the census in

2021. Which is a worth an applause for all individual observers taking part in this count, undertaken under not always the best circumstances for counting our beloved 'snowflakes of the North'!



December 2021; Bewick's Swans on the island of Texel, the Netherlands – Picture Ruud Brouwer



**Figure 5.** Breeding success for Bewick's Swans in the NW-European population from 2012–2021, measured as the percentage of cygnets in the wintering flocks, recorded from winters 2012/13 to 2021/22 respectively.

## Purpose of age counts

Since the early 1980's, the Swan Specialist Group has monitored the NW-European Bewick's Swan population carefully, to keep track on the population status and assess its conservation requirements. For this purpose, an international count of the population size is organised once every five years (last in 2020) and productivity is assessed on an annual basis. This setup is important because historically the population size was small and, following an increase in numbers between the 1970s and mid-1990s, is now in serious decline and subject to major changes in the winter distribution. Indeed, having peaked at just below 30,000 birds in 1995, numbers dropped to 18,100 in 2010. A slight recovery to c. 20,100 birds in 2015 (Beekman *et al.* 2019) has been maintained hereafter. But the final results of the 2020-census, presented on the 7th International Swan Symposium/26th Trumpeter Swan Society Conference in October 2022 in Wyoming (US) by Eileen Rees, showed a steep decline to 12,900 swans for the NW-European wintering Bewick's population (Rees *et al.* in prep.). Age counts are an important tool for understanding such fluctuations in population size, along with results of ring-readings which give insight in survival and mortality patterns, and changes in migration strategy.

Many thanks and with all best wishes,

Wim Tijssen	Kees Koffijberg	Preben Clausen
Poelweg 12	Sovon Vogelonderzoek Nederland	Arhus University
1778 KB Westerland	(Dutch Centre for field ornithology)	pc@ecos.au.dk
The Netherlands	kees.koffijberg@sovon.nl	

wimtijssen@ziggo.nl

## References

- Beekman, J. , Koffijberg K., Wahl J., Kowallik C., Hall C., Devos K., Clausen P., Hornman, M., Laubek B., Luigujoe L., Wieloch M., Boland H., Svazas S., Nilsson L., Stipniece A., Keller V., Gaudard C., Degen A., Shimmings P., Larsen B.H., Portolou D., Langendoen T., Wood K.A. & Rees E.C., 2019. Long-term population trends and shifts in distribution of Bewick's Swans *Cygnus columbianus bewickii* wintering in northwest Europe. *Wildfowl Special Issue 5*: 73-102.
- Gupte, P.R., Koffijberg K., Müskens G.J.D.M., Wikelski M. & Kölzsch 2019. Family size dynamics in wintering geese. *J Ornithol* 160, 363–375. <https://doi.org/10.1007/s10336-018-1613-5>
- Holm, T.E., Nielsen, R.D., Clausen, P., Bregnballe. T., Clausen, K.K., Petersen, I.K., Sterup, J., Balsby, T.J.S., Pedersen, C.L., Mikkelsen, P. & Bladt, J. 2021. Fugle 2018-2019. NOVANA. Aarhus Universitet, DCE – Nationalt Center for Miljø og Energi. - Videnskabelig rapport nr. 420. <https://pure.au.dk/portal/files/208939084/SR420.pdf>
- Nuijten, R.J.M., Wood K.A., Haitjema T., Rees E.C. & Nolet B.A. 2020. Concurrent shifts in wintering distribution and phenology in migratory swans: Individual and generational effects. *Glob Change Biol.* 26: 4263– 4275. <https://dare.uva.nl/search?identifier=07de5b40-d7a5-4259-83e8-af77f02c213c>
- Wood, K.A., Newth J.L., Hilton G.M., Nolet B.A. & Rees E.C. 2016. Inter-annual variability and long-term trends in breeding success in a declining population of migratory swans. *J. Avian Biol.* 47: 597–609.
- Wood, K.A., Nuijten R.J.M., Newth J.L., Haitjema T., Vangeluwe D., Ioannidis P., Harrison A.L., Mackenzie C., Hilton G.M., Nolet B.A. & Rees E.C. 2018. Apparent survival of an Arctic-breeding migratory bird over 44 years of fluctuating population size. *Ibis* 160: 413–430.