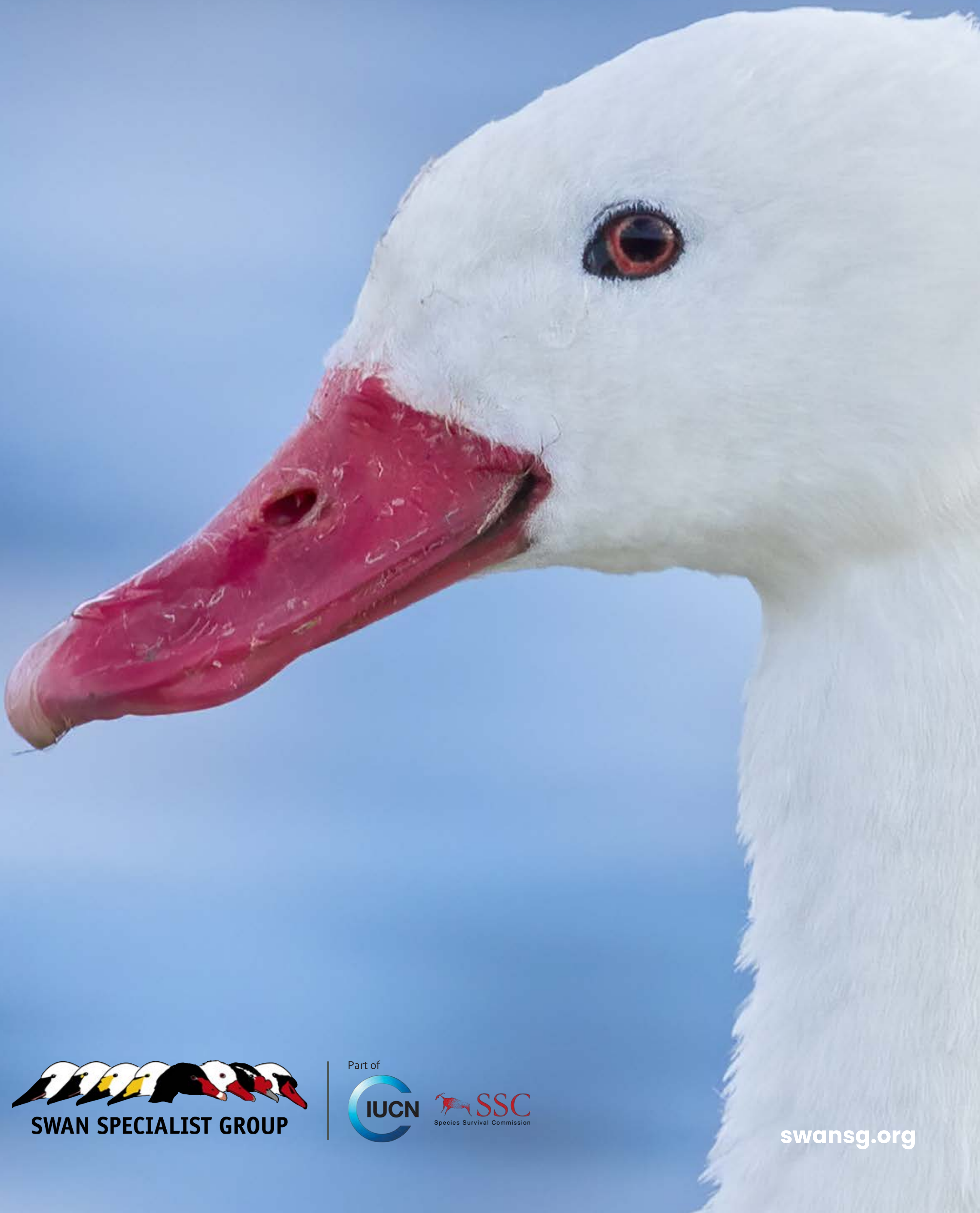
19 / 2024

Swan News

Newsletter of the IUCN SSC Swan Specialist Group



SWAN SPECIALIST GROUP

Part of IUCN SSC Species Survival Commission

swansg.org

ABOUT THE SWAN SPECIALIST GROUP

The IUCN SSC Swan Specialist Group (SSG) is a global network of over 140 swan specialists from 36 countries who undertake monitoring, research, conservation and management of swan populations.

The SSG strives to facilitate effective communication between members and others with an interest in swan management and conservation world-wide, in order to improve national and international links for cooperative research, to identify gaps in knowledge and to provide a forum for addressing swan conservation issues.

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ANNOUNCEMENTS

Proceedings of the 7th International Swan Symposium

International swan symposia convened by the Swan Specialist Group of the IUCN Species Survival Commission (previously the IWRB and the Wetlands International Swan Specialist Group) have been held periodically since the 1st International Swan Symposium was held at Slimbridge, UK in 1971. On each occasion, papers presented at the symposia have been published as proceedings of the meetings. We are therefore delighted to report that, following the joint 7th International Swan Symposium (7th ISS), which was held in conjunction with the 26th Conference of the Trumpeter Swan Society (TTSS) at Jackson, Wyoming, USA in October 2022, the proceedings have now been published as Wildfowl Special Issue No. 7 in December 2024 (Clausen *et al*. 2024). This continues the tradition of publishing swan symposia proceedings either as stand-alone volumes (*e.g.* Matthews & Smart 1980 for the 2nd ISS; Sears & Bacon 1991 for the 3rd ISS; Rees *et al*. 2002 for the 4th ISS; Wood & Rees 2019 for the 6th ISS) or, in the case of the 1st and 5th ISS, as a group of papers within the Wildfowl journal (*Wildfowl* 24 in 1973; *Wildfowl* 64 in 2014), which provide an invaluable source of information on the work undertaken on swan species over the decades.

The talks and poster presentations at the 7th ISS covered a range of topics including population monitoring, movements and flyway delineation, habitat use, demographic rates, consequences of climate change, and threats and conservation management of swan species. Following on from the detailed assessment of current trends and future directions in swan research published in the proceedings of the 6th ISS (Wood *et al*. 2019, in *Wildfowl* Special Issue No. 6), along with an assessment of the conservation of the world's swan populations (Rees *et al*. 2019), a synthesis paper at the start of the 7th ISS proceedings (Rees & Clausen 2024) gives an update on the latest information on swan research and conservation initiatives over the past 5 years. This review describes recent swan papers published in other journals (*e.g.* Ao *et al*. 2020; Fang *et al*. 2020; Brides *et al*. 2021, 2022; Clausen *et al*. 2020; Linssen *et al*. 2023; Nuijten *et al*. 2020a,b; Soriano-Redondo *et al*. 2023; Wood *et al*. 2021, all listed below), as well as highlighting the additional 13 papers appearing in the Special Issue itself. The latter include further information on population size and trends (*e.g.* Rees *et al*. 2024; Olson 2024), breeding biology (Boiko & Luigujõe 2024; Coleman & Coleman 2024), how incubating swans accommodate thermal flux in their environment (Miller & Delehanty 2024), and some outcomes of conservation initiatives (Kearns *et al*. 2024; Shields *et al*. 2024). Wood & Newth (2024), in a comprehensive review, give immense insight to the issue of lead poisoning posed on swans by fishing weights. This paper is an important companion to the major review of issues involved with lead shot and rifle ammunition on waterbirds and other animals, and how these can be addressed if Governments actually decide to do so, as illustrated by the progress made following the transition to use of non-lead ammunition in Denmark (Kanstrup 2024).

Wildfowl is an open access journal, so the papers published in *Wildfowl* Special Issue No. 7 are available for download, free of charge, on the journal's website. Currently this is at https://wildfowl.wwt.org.uk/index.php/wildfowl/issue/archive, and a link will be provided on moving *Wildfowl* online to tidsskrift.dk during 2025.

by **Eileen Rees** and **Preben Clausen**

Acknowledgements

The 7th International Swan Symposium of the IUCN SSC Swan Specialist group, held in conjunction with the 26th Conference of the Trumpeter Swan Society, was hosted and co-organised by the Ricketts Conservation Foundation. We are immensely grateful to them, to the sponsors of the symposium and to the organising and scientific committees for their efforts in preparing an excellent meeting. We also thank the authors for preparing highly informative papers for publication, and the referees for their careful, detailed reviews of the submitted manuscripts.

Publication of *Wildfowl* Special Issue No. 7 was funded by The Trumpeter Swan Society, and we thank them for their additional generosity in supporting this work.

Dedication

Mary Rita Ely (1955 - 2024)

This article is dedicated to the memory of Mary Rita Ely, beloved wife of Craig Ely (Guest Editor of *Wildfowl* Special Issue No. 7), who not only supported his “mad” work on swans and geese over many decades but was a joyful presence at recent swan symposia.

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Future symposia

Following the great success of the 7th International Swan Symposium (ISS), held in Jackson, Wyoming, in October 2022, and given that the IUCN SSC now aims to hold symposia at c. 5-year intervals, thoughts are turning to the timing and location of the next meeting.

We are therefore delighted to report that plans are developing to hold the next international swan symposium – the 8th ISS – in Germany in November 2026.

This is kindly being hosted by the Nature and Biodiversity Union (NABU), which was founded in 1899, and is now the country's oldest and largest non-governmental organisation committed to environmental conservation. Further information on the meeting will become available later this year.

Additionally, the Swan Specialist Group, together with the IUCN SSC's Duck and Goose Specialist Groups, will be actively involved in the international All-Waterfowl Congress, being held in Montpelier, France, in March 2028.

This 5-day meeting, being hosted by the Office Francais de la Biodiversite, aims to gather experts from all waterfowl taxa, for up-to-date presentations on waterbird species, their habitats and conservation. Again plans are still in development but will be made available in due course, and any preliminary comments/queries may be addressed to Dr Matthieu Guillemain (matthieu.guillemain@ofb.gouv.fr) at the OFB, who is also Chair of the Duck SG.

by **Julia Newth** and **Eileen Rees**

A pair of Whooper swans (*Cygnus cygnus*) in flight near the Oritkari harbour in Oulu (**Photo:** 'Estormiz' via Wikimedia Commons)

Results of the 42nd International Bewick's Swan age count on 16/17 December 2023

For more than four decades, age counts to assess the breeding success in NW-European Bewick's Swans have been carried out in November or December each year, with the most recent count made on 14/15 December 2024. This long-standing series of age counts, carried out under the umbrella of the Swan Specialist Group, was originally initiated by Jan Beekman and continued by Wim Tijsen over the past decade. Since 2023, coordination of the count has been maintained by the Sovon Dutch Centre for Field Ornithology and the German Federation of Avifaunists (DDA). This article presents the data collected in December 2023 and gives an outlook to the count of December 2024.

Results December 2023

In contrast to December 2022, when there was extensive snow cover in parts of the wintering range, December 2023 was amongst the warmest recorded so far in many European countries. Age counts for mid-December 2023 were received from nine countries (including Greece). Given that no Bewick's Swans were seen in Latvia, we assume that there were none in the other two Baltic States as well. In an overall sample of 12,564 individuals, 1,149 young were found, putting the percentage of juveniles in the wintering flocks 9.3% (Table 1). This sample likely covers nearly the entire flyway population, according to the latest (provisional) estimate of 12,900 individuals recorded in the January 2020 census. In addition to the countries listed in Table 1, 11.4% cygnets were recorded in a large sample of 4,324 individuals age-checked by Greek colleagues in the Evros Delta.

Observations made in earlier years have also found that the age-ratios for Bewick's Swans wintering in the Evros Delta tend to be higher than those recorded in NW European countries.

Country-specific counts show the largest percentage of young were found in the southwestern parts of the NW European wintering range, *i.e.* in Belgium and in the UK. Lowest were recorded in the northern/eastern areas, in Denmark and Poland. The low number of cygnets in the Netherlands may be due to c. 40% of all Bewick's Swans in the country being found feeding on submerged vegetation in freshwater waterbodies. Such habitat usually is less frequented by pairs with broods. To our surprise, given shift in the swans' distribution during the 21st century, some Bewick's Swans also visited SW Ireland in winter 2023/24. Most seem to have left by the time of the brood count, but 12 individuals were recorded in early December 2023, among them one young.

The results of the 2023 age-count are a step back from the slight increase in Bewick's Swan breeding success recorded for the previous two seasons (Figure 1), but 9.1% cygnets in the population in December 2023 is similar to the average for data collected in the past eleven years. As known from longer-term data series (Wood *et al*. 2016; Nuijten *et al*. 2020), the percentage of young has declined since the 1990s.

Regarding brood size, half of all recorded broods consisted of only one young (Figure 2).

Table 1 - Overview of age count data collected in NW-Europe in December 2023. In addition to the countries listed, 492 cygnets were found in a sample of 4,324 birds in the Evros Delta in Greece (11.4%).

Country	Total number aged	No. adults	No. cygnets	% cygnets	Remarks
France	486	437	49	10.1	
Belgium	203	180	23	11.3	
Netherlands	3,133	2,928	205	6.5	
United Kingdom	409	361	48	11.7	
Germany	7,243	6,504	739	10.2	
Poland	371	341	30	8.1	
Denmark	719	664	55	7.6	134 not aged
Ireland (Republic)	0	0	0	0	
Latvia	0	0	0	0	
Lithuania	0	0	0	0	
Estonia	0	0	0	0	
All countries	**12,564**	**11,415**	**1,149**	**9.3**	

Broods with > 3 young were extremely rare in the sample of 247 families observed. Overall the average brood size was 1.70 young per (successful) pair. A fairly similar result was found in the Evros Delta in Greece (average = 1.66 young/pair; sample size = 246 broods).

Over the years, brood size has shown less annual variation than the percentage of juveniles in the wintering flocks. Nonetheless, the average brood size in December 2024 was amongst the lowest in the 2013–2023 data series (Figure 3). Only in 2017, a year with very poor reproduction, was it smaller.

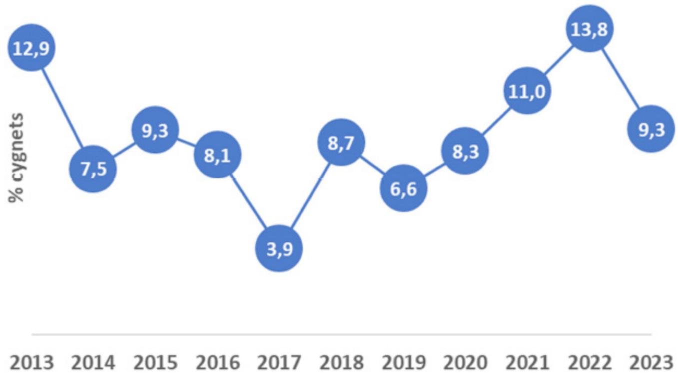

Figure 1: Breeding success for Bewick's Swans in the NW-European wintering population from 2013–2023, measured as the percentage of young in the wintering flocks, recorded from winters 2013/14 to 2023/24.

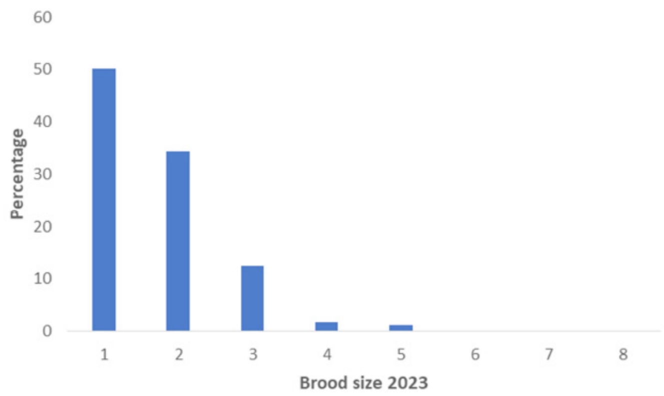

Figure 2: Recorded brood size for Bewick's Swans in the NW-European population in December 2023 (247 broods sampled).

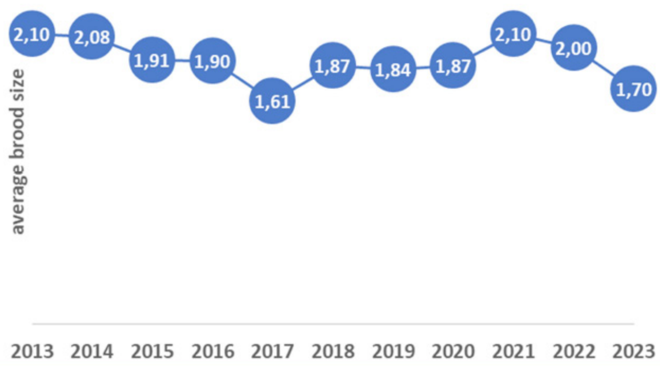

Figure 3: Average brood size in Bewick's Swans in the NW European wintering population from 2013–2023.

Outlook for December 2024

Based on information collected so far, 2024 is likely going to be one of the worst breeding seasons since 2013, and possibly for several decades. German colleagues found only 43 young (1.3%) in a sample of 3,357 swans in Estonia, Latvia and Lithuania earlier this autumn (H. Eggers, S. Hollerbach). In Schleswig Holstein in Germany, the Mid-November count showed 0.6% young, but in a rather small sample (334 individuals) and just at the start of the season (H.J. Augst). In Niedersachsen in Germany by the same time 31 young were found among 697 swans (4.5%) (A. Degen). Non-systematic records from waarneming.nl in the Netherlands point at a juvenile percentage well below 5%. Overall numbers in the Netherlands recorded so far are rather small as well.

The tendency for low numbers of cygnets fits in an overall pattern in arctic goose species breeding on the Russian tundra. Data collected in Germany and the Netherlands in October-November indicate that most species have poor breeding results. Greater White-fronted Goose and Tundra Bean Goose have about 8% young, Barnacle Goose about 3% and Dark bellied Brent Goose about 2% (all preliminary figures). Information from Russian colleagues from Kolguev Island in the Barents's Sea point at a very cold spring and summer (including flooding of coastal colonies) (P. Glazov), but it is unclear if this phenomenon has affected the region as a whole.

by **Kees Koffijberg**
(on behalf of the Swan Specialist Group)

Acknowledgements

Many thanks go to all who participated in the coordination of the survey and collection of
the data in the field. Nikolas Prior (DDA) prepared most of the data in this newsletter, but
moved from DDA into another work position in May 2024.

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A Public Bird Migration Tracking and Citizen Science Initiative

The Swan Project was launched in the winter of 2023/2024 as an international collaboration aimed at establishing a swan-tracking system. In this project, Whooper Swans and Bewick's Swans are fitted with GPS loggers equipped with cameras (called SwanEyes, Figure 1), allowing their locations and images to be made publicly available.

SwanEyes is a neck ring-style GPS logger with an integrated camera, developed by Druid Technology Co., Ltd. It measures 80 mm in length, 60 mm in inner diameter, and weighs 130 g. The device features two cameras angled 60 degrees from the GPS, each with a 240-degree field of view. Powered by solar energy, SwanEyes transmits data via cellular networks. Location data is recorded six times a day, every four hours, while images are captured at 07:00, 09:00, 13:00, and 17:00, and can be retrieved at 01:00, 09:00, and 17:00. Although there is a slight time lag, this system enables near-real-time tracking of the swans' locations and the views from their perspective. When cellular coverage is lost, the device continues to store data, which can be retrieved once the connection is restored.

All location data and images are accessible to the public through a multilingual (Japanese, Chinese, and English) website (https://www.intelinkgo.com/swaneyes/) and a smartphone application. The app even offers navigation to the swans' last known locations. Citizen scientists are encouraged to contribute by sharing their observations on X (formerly Twitter) using the hashtag *#SwanEyes*.

In December 2023, 10 Whooper Swans (5 males and 5 females) were fitted with SwanEyes at Lake Izunuma-Uchinuma (38°43′ N, 141°07′ E) in Miyagi Prefecture, Japan, with each swan receiving a unique nickname (Figure 2). In March 2024, 10 Bewick's Swans will be similarly tagged at Lake Kutcharo (45°08′ N, 142°19′ E) in Hokkaido. This report focuses on the Whooper Swans.

For example, Figure 3 shows "Akira" foraging in a rice field, capturing a "selfie". Figure 4 features a view of a roost from "Hitoshi." The combination of GPS data and images makes it easy to determine when, where, and what the swans are doing. Some images, such as "Natsuki's" photo of a friend in flight (Figure 5) or "Kiyoshi's" capture of friends migrating from Akita to Aomori Prefectures (Figure 6), show the swans in motion.

In some cases, the images reveal additional information. For example, Figure 6 was taken at 07:00, and although the GPS tracking indicated a northeast trajectory, the terrain in the image suggested that "Kiyoshi" was actually flying north, 22 km further out to sea than the tracking path showed. This highlights that the GPS path is only an estimate. These swans crossed the sea from Honshu to Hokkaido—a journey previously hypothesized based on satellite tracking data, but now visually confirmed by the project's images (Figure 7).

SwanEyes also captures images of other birds. Although "Haruka's" SwanEyes lost communication shortly after her release, she was later photographed by her mate, "Hitoshi" (Figure 8), about a month later. Although her collar number wasn't visible, we identified her based on the context and her proximity to "Hitoshi." Typically, lost communication means a swan is lost, but in Haruka's case, we confirmed her survival due to her pairing with "Hitoshi."

In March, the Whooper Swans with SwanEyes migrated to Hokkaido (Figure 9). While their general behavior—roosting in lakes and foraging in nearby farmlands—remained consistent, the types of foraging areas changed. In Hokkaido, they transitioned from lotus fields and rice paddies around Lake Izunuma-Uchinuma to fields of dent corn (Figure 10), wheat, and pastures, showcasing regional adaptations.

By April, the swans departed Japan, heading north to Sakhalin (Figure 11). Several swans stayed at lagoons along the Sakhalin coast, including Lake Busse in the south (Figure 12). Images from "Naoya" suggest that the swans were foraging on eelgrass in these lagoons. During their northward migration, some swans remained at sea off Sakhalin (Figure 13), likely resting, as confirmed by images taken by "Akira" (Figure 14). These visuals provide insights into their behavior and environment that cannot be captured by location data alone.

The Swan Project is still in its early stages, and while we are learning as we go, the public's positive response has been motivating. Many have been using the available GPS data to track the swans, posting their findings and photographs on X (Twitter). Since SwanEyes only captures images close to the individual swans, photos contributed by others showing the entire flock have been extremely helpful.

As I write this in late September, communication with the tagged swans is temporarily lost while they are in their breeding grounds. We eagerly anticipate their return in autumn and look forward to the images they will share. We hope this project continues to foster interest in swans, birds, and ornithology as a whole.

You can also refer to "Goose Bulletin" (https://cms.geese.org/content/goose-bulletin) by Goose Specialist Group for information about the SwanEyes Project.

by **by Tetsuo Shimada, Kan Konishi, Guozheng Li, Guodong Shi** and **Hiroyoshi Higuchi**

Figure 1: GPS logger with camera (SwanEyes). The square in the center is the GPS unit, flanked by two cameras positioned at a 60-degree angle, providing a 240-degree field of view. The total weight is 130g.

Figure 2: 6C08 (“Miho”) fitted with SwanEyes.

Figure 3: “Akira” foraging in a rice field (December 16, 2023).

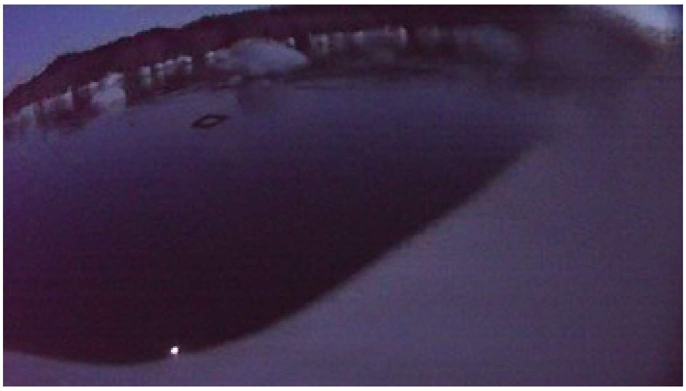

Figure 4: Roost photographed by “Hitoshi” (December 23, 2023).

Figure 5: Friend in flight, photographed by “Natsuki” (January 27, 2024).

Figure 6: Image from “Kiyoshi” flying from Akita to Aomori Prefectures, showing six companions (March 14, 2024).

Figure 7: “Kenji” flying over the Pacific Ocean (February 9, 2024).

Figure 8: “Haruka” captured by “Hitoshi” (January 30, 2024).

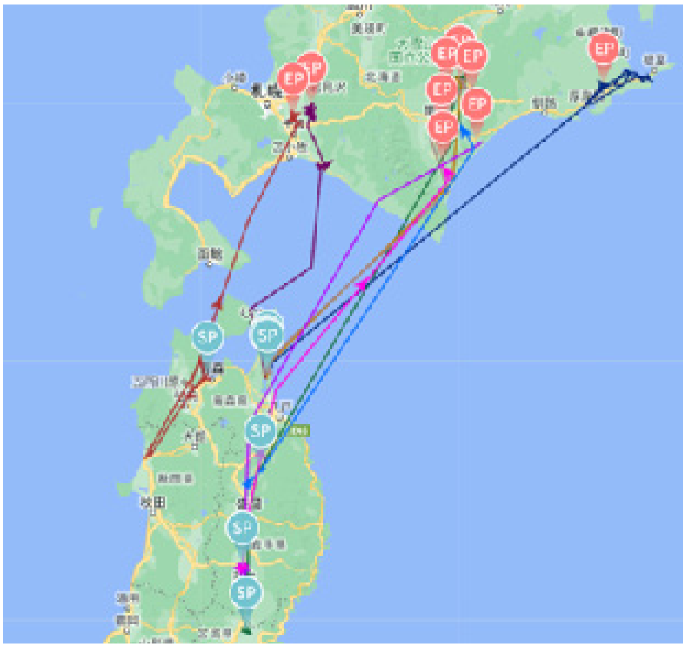

Figure 9: Whooper Swans in Hokkaido (EP mark: March 24, 2024).

Figure 10: Dent corn field used by "Kenji," with a Bean Goose also visible (March 18, 2024).

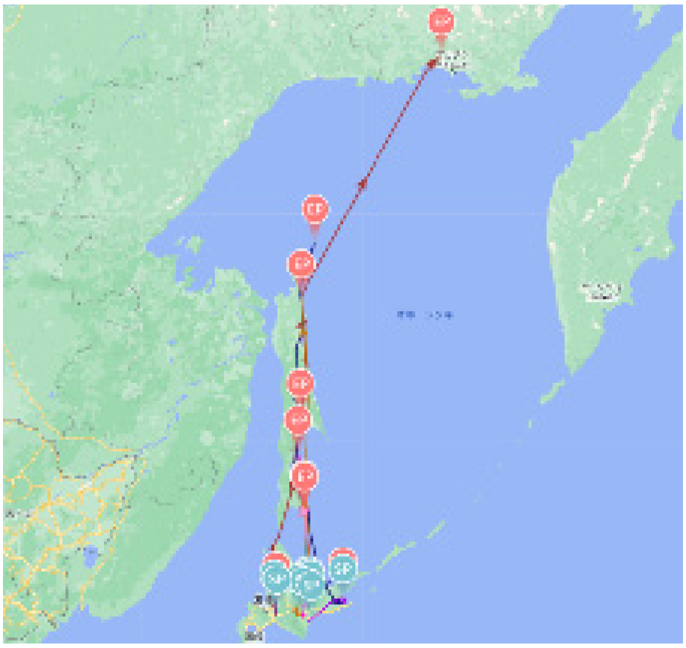

Figure 11: Whooper Swans in Sakhalin (EP mark: April 30, 2024).

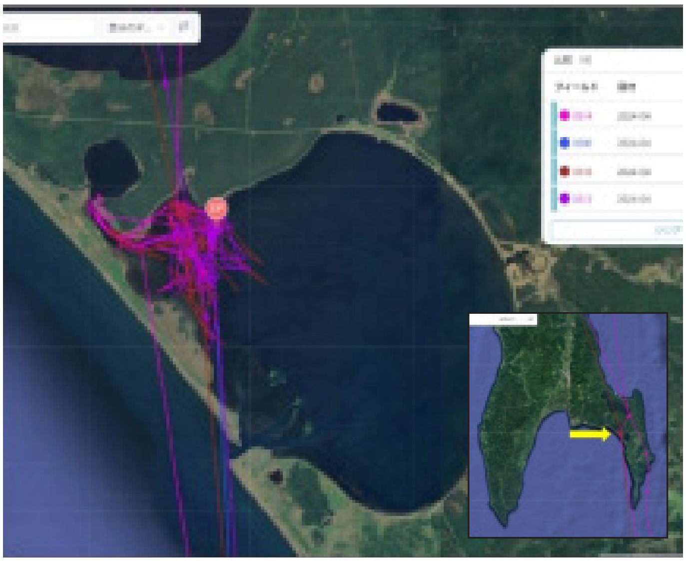

Figure 12: Lake Busse, where four Whooper Swans stayed.

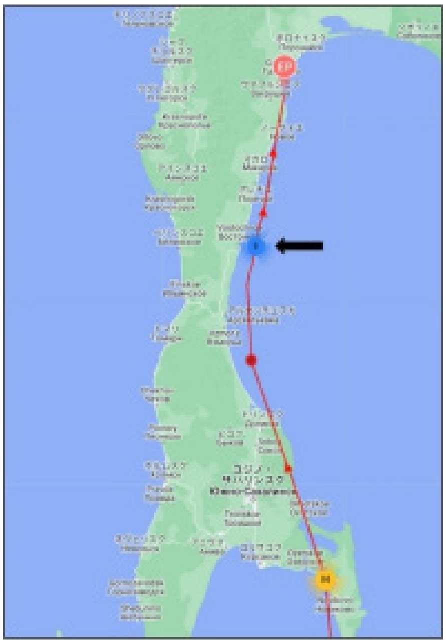

Figure 13: Location off Sakhalin where the swans rested.

Figure 14: Flock resting at sea, captured by "Akira" (April 25, 2024).

Comparing GPS tracking and traditional ring resighting data as sources of spatial information in wintering Bewick's Swans

Marking wild birds with coded leg rings or neck collars and subsequently collecting resightings from citizen scientists, is a traditional and well-established way to gain insight into the movements and space use of individuals and populations. However, there is one major drawback to resighting data: they are prone to spatial and temporal bias, depending on where and when observers are keen to go into the field. Those parts of an individual's range where there are simply no people observing and logging marked animals, are even left uncovered entirely by resightings (Boom & Kissling, 2024). In the recent years GPS tracking techniques have greatly advanced, providing a new alternative to resighting data for inferring the space use of animals and populations (Boom & Kissling, 2024; Jiguet *et al*., 2011). However, due to the costs associated with manufacturing transmitters and transferring data, tracking data are much more expensive to obtain, per individual, than traditional resighting data. As a result, tracking datasets generally contain a much lower number of individuals than resighting datasets. GPS tracking and resighting data thus represent a practical trade-off between on the one hand the number of marked or tagged individuals, and on the other hand the data quantity and spatial coverage per marked individual.

In a recent publication (Linssen *et al*., 2024), we explored this trade-off by comparing the spatial information contained by neck collar resightings and GPS tracking data, using Bewick's Swans wintering in northwest Europe as our study population. We calculated winter range sizes from both data types, and specifically examined the effect of the number of individuals and the number of records (either resightings or GPS fixes) on the inferred range size. This gave us an idea of how many individuals or records of both data types yield the same information about population space use. The annual probability of collar-marked Bewick's Swans being resighted in winter is very high among bird species (>90%; Wood *et al*., 2018), making wintering Bewick's Swans a suitable study system for examining how both data types compare for inferring population ranges.

We used data from the Dutch ringing scheme, starting 2005, and the more recent German ringing scheme, starting 2021. Within those schemes, Bewick's Swans were caught on winter sites and given coded neck collars, either normal (n = 238) or containing a GPS transmitter (n = 227). We extracted resightings of the neck collars from the public database www.geese.org (Ebbinge *et al*., 2020), totalling 21,268 resightings from 446 individuals, and compared these to the tracking data derived from those collars containing GPS transmitters. We used three different modelling methods of increasing complexity to calculate range sizes: minimum convex polygons (MCPs), kernel density estimations (KDEs) and ensemble species distribution models (ESDMs).

In general, the Bewick's Swan midwinter range estimates varied widely within each modelling method, depending on the type of data (resighting vs. GPS tracking) and the number of individuals or records on which the estimation was based (MCP results displayed in Figure 1). GPS tracking data yielded consistently larger range sizes than resighting data. For example, the MCP area increased asymptotically from almost 0 when few individuals were used, to roughly 400,000 and 700,000 km2 for resighting and GPS tracking data respectively (Figure 1a). Roughly 20 tracked individuals already yielded a larger area than resightings of any large number of individuals did (Figure 1a, blue and red dashed lines). Likewise, specific numbers of GPS records yielded substantially (~1.5 times) larger areas than resighting records (Figure 1b).

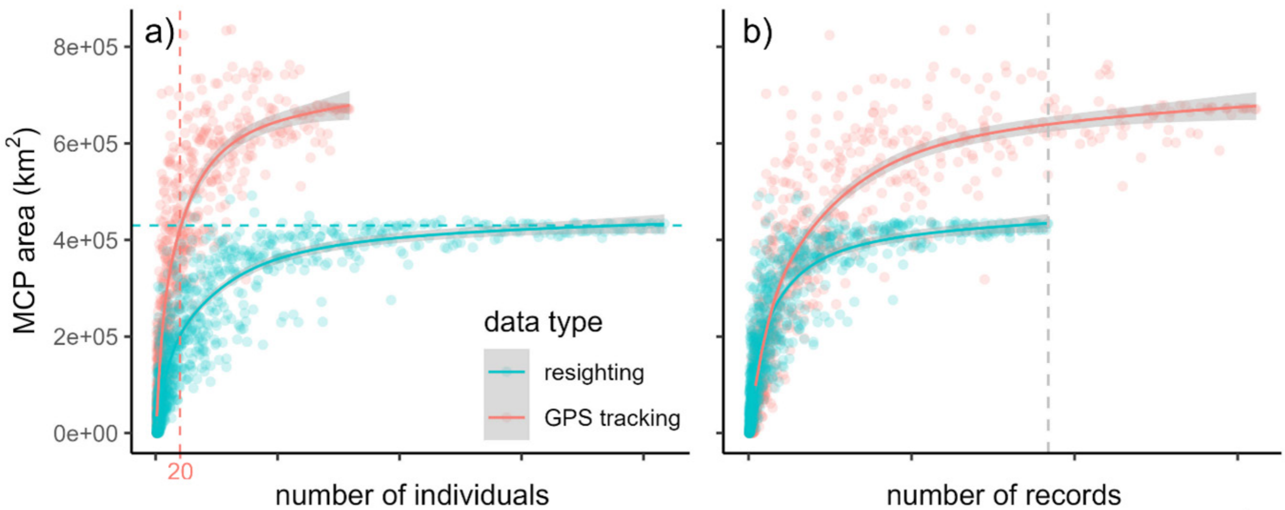

Figure 1: MCP areas of the Bewick's Swan's midwinter range, calculated alternately from resighting (blue) and GPS tracking data (red), plotted against (a) the number of individuals used for the range estimation and against (b) the number of records (either GPS tracking or resighting) contained by those individuals. (a) and (b) thus display the exact same models, but plotted against different model properties. The blue and red dashed lines in panel (a) illustrate that roughly 20 tracked individuals yielded an area similar to the resightings of any large number of individuals.

As mentioned, the main drawback of resightings data is its incomplete spatial coverage. To see where individual Bewick's Swans had a low probability of being reported by observers, we linked hourly GPS records of tracked swans to the resightings of those same individuals. We only used GPS transmitter neck collars deployed in the winters of 2016/17–2019/20 for this (n = 57), since they were similar in shape and size to normal Bewick's Swan neck collars with alphanumeric inscriptions, and their positions were never made publicly available. We had 36,059 non-resighted and 654 resighted hourly GPS records from 57 individuals (Figure 2), implying an average hourly resighting rate of marked swans across their midwinter range of 0.0178, or one resighting every 56.1 hours of daytime. The Netherlands and the federal states of Lower Saxony and Schleswig-Holstein (Germany) had the highest hourly resighting rate (0.0291, 0.0216 and 0.0156 respectively) whereas the United Kingdom, Denmark and Poland were notable regions with many GPS records but low resighting rates (0.0014, 0.0031 and 0.0034 respectively; Figure 2).

Our study shows that tracking data provide substantially more information on space use and larger range coverage than resighting data. Even for the Bewick's Swan, with its high annual resighting probability, GPS transmitters generated records across an area 1.5–2 times larger than resightings did. Only a small number of GPS-tracked individuals (~20) was sufficient to yield larger area coverage than much higher numbers of resighted individuals (well over 400) ever reached. This is in part due to the fact that GPS trackers yield many more records per individual than normal coded neck collars. However, any given number of GPS records (rather than GPS-tracked individuals) also yielded a much larger area than that same number of resighting records did, indicating that GPS records better represent the full space use of an individual than resightings do.

Nonetheless, efforts of citizen scientists to observe marked birds are invaluable and even necessary for collecting many types of information, such as pair status, breeding status, behaviour, group dynamics and population censuses. Likewise, for various statistical purposes such as population models and survival analyses, long-term repeated observations are needed of large numbers of marked individuals from a population. This generally requires a combination of inexpensive but extensive marking of individuals, using traditional, normal coded rings, and large-scale citizen science observing effort. Tracking data can however be used to direct citizen science efforts, by empirically assessing where resighting probabilities are highest and lowest.

The Western-European flyway population of Bewick's Swans is in rapid decline (Beekman *et al.*, 2019; International Swan Census 2020, unpublished results), in part due to low breeding successes for reasons poorly understood (Nuijten, Vriend, *et al.*, 2020; Wood *et al.*, 2016). Annual monitoring of pair status and brood sizes in the winter range is very important to follow this trend (Tijsen & Koffijberg, 2022).

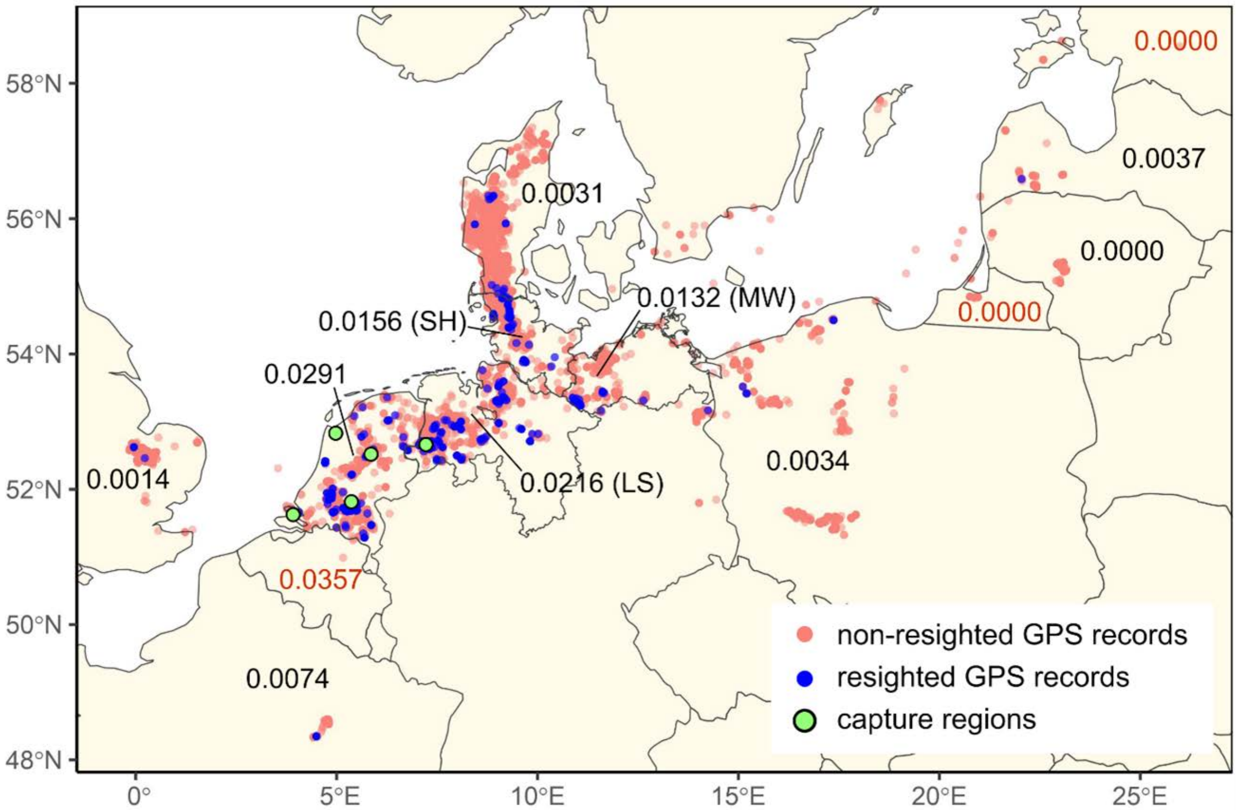

Figure 2: Hourly GPS records of Bewick's Swans during the midwinters (December and January) of 2016/17–2021/22 (n = 36,713). GPS records were either resighted (blue, n = 654) or not (red, n = 36,059). Numbers indicate hourly resighting rates per region. Germany is split into three federal states: Lower Saxony (LS), Schleswig-Holstein (SH) and Mecklenburg-Western Pomerania (MW). Numbers in red indicate regions with less than 100 GPS records and hence less reliable resighting rates. Green dots indicate the regions in which birds were captured throughout the years.

Combined with the climate-induced north-eastward shift of the population's winter range (Beekman *et al*., 2019; Linssen *et al*., 2023; Nuijten, Wood, *et al*., 2020), the observation efforts should ideally be increased in Denmark, northeast Germany and Poland, where resighting rates are currently a two- to twelvefold lower than in the more traditional wintering areas of the Netherlands and northwest Germany.

The full study, including a supplementary table of all regions and their numbers of resightings and resighting rates, can be viewed online at https://doi.org/10.1111/jbi.14996

by **Hans Linssen** and **Bart Nolet**

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Bewick's Swan (**Photo:** C. Butters)

Why is the population size of Mute Swans lower than other swan species in China?

Information indicates that the number of Mute Swans (*Cygnus olor*) in China is similar to that for the whole of Asia (Rees *et al*. 2019), which is divided into two populations, namely the eastern Chinese (or East Asian) and the western Chinese (or Central Asian) populations (Figure 1).

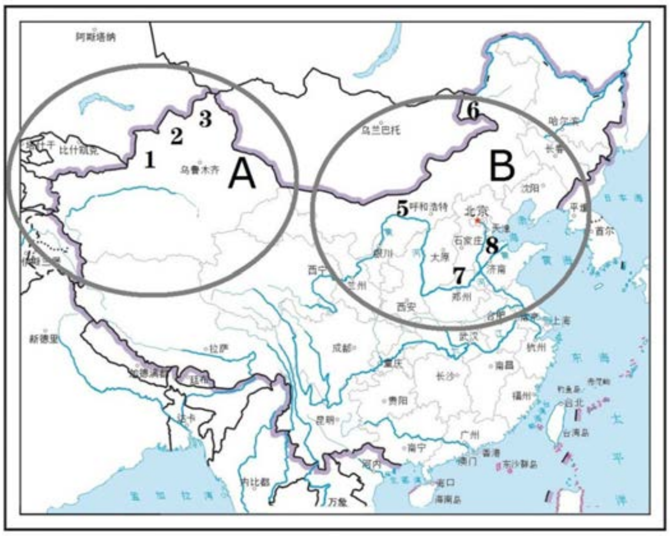

Figure 1: The distribution of Mute Swan populations in China. Note: A = population in West China (from the Central Asia population), with 1 = Ili, 2 = Ebinur, 3 = Ulungur; B = population in East China (the East Asia population), with 5 = Ulansuhai, 6 = Dalai, 7 = Zhengzhou, and 8 = Yellow River. Numbers are breeding or wintering grounds (with the same names as in Table 1)

From 2021 to 2024, we conducted field investigations on the breeding ecology, population size, and trends of Mute Swans in northern China. Mute Swans are the least abundant of the swan species occurring in China (the others being *C. cygnus*, *C. bewickii*, and *C. atratus*), with numbers estimated at between 2,000–5,000 individuals. According to earlier estimates by Ma *et al*. (1993/2000) and Rees *et al*. (2019), the total number of overwintering and breeding Mute Swans in China is of c. 3,000 birds, which is < 1% of the global population. Moreover, Zhao *et al*. (2016/2017/2019) previously suggested that the number of Mute Swans in East China is actually less than 1,500 individuals. The reason may be that Mute Swans frequent areas too close to humans, making them more susceptible to being hunted or poisoned by locals (Liu & Ma, 2017). Nevertheless, we believe that the survival status of Mute Swans in China is gradually improving, and that the population size is stable or slowly increasing.

Through on-site observation and visits, we have collected data on 4–6 pairs of breeding Mute Swans in the Ili River Basin of Xinjiang over the past four years. In 2021 and 2022, the breeding success rate was less than 40%. By 2023, at least 5 or 7 cygnets from two families had successfully fledged. In 2024, a family of 9 cygnets successfully fledged, setting a record for the highest success rate in China (Figure 2).

Usually, nesting and mating begin in early to mid-March, with huge nests located on reed beds. The base diameter of nest is 1.9–2.3 m, the upper diameter is 1.2—1.6 m, the nest platform is 40–70 cm above the water surface, and the surrounding water depth is 60–90 cm. If the habitat is suitable, Mute Swans will nest in one place for some years. The nest platform is 8–10 m away from the shore of the fish pond and 700–1,000 m away from the surrounding roads and springs or main rivers. It will not be on the roadside and is relatively hidden and quiet. During the breeding season, the males are highly aggressive and build and guard their nesting area, with the female mainly responsible for incubating. The incubation period exceeds one month (32–35 days).

On 16th March, 2024, Mute Swans laid the first egg, and then laid another egg every other day thereafter. Around 3rd May, the cygnets synchronously hatched, (with a difference of 1–2 days). The brood rearing period took 4–5 months, and flying practice began on the 113–115th day. By the end of August and early September, the weight of the cygnets had reached 8.3 kg.

In mid-September 2024, it was first discovered that 9 young cygnets were practicing flying on their own without their parents accompanying or leading them (due to the female having a s broken wing and the male still being in moult). On 18th September 2023, the male Mute Swan led the cygnets on migration, while the injured female remained for the winter because she was unable to fly.

By mid to late September and early October (when migration begins), the weight of the young birds was 9–10 kg, which is relatively close to the weight of the adults, 12–14 kg.

After two years of continuous observation, the summer replacement of flight feathers in adult swans in the Ili River Valley is basically the same. It takes two months for adults to moult their feathers. They start to replace their feathers in the first half of July and then begin to pluck their flight feathers themselves. As a result, they were unable to fly until early or mid-September. According to previous observations, it is better for adults to begin replacing their flight feathers in late June or early July. On the Ili River, however, Mute Swan parents flew with their young very little pre-migration, and relatively late in the season, because of the delayed moult. In the end, the migration period was also delayed, by about half a month.

The Mute Swans which overwinter in the Ili River Valley belongs to the Central Asian population (Rees *et al*., 2019). The area is quite unique because of the 162 hot spring and a large area of water (including many fish ponds) which does not freeze in winter. These are known as the of "Swan Spring" wintering grounds. There may also be a factor of local people feeding the swans.

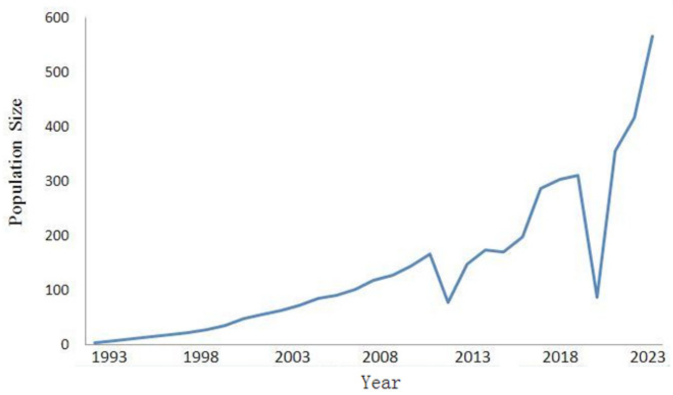

Figure 2: The rapidly increasing population size of Mute Swans overwintering in Yingtamu Swan Spring, Yining County, Xinjiang, China. Two peak depressions may be due to avian influenza H5N6. The sudden increase in peak at the end of 2023 may be due to a disaster (unusual weather and sudden cooling) in the wintering grounds of neighboring countries in central Asia. According to all statistics in the Chinese Ili River basin, the population size exceeded 900 swans in the winter (2023-2024) (Table 1). This is currently the largest group of Mute Swans in China.

The number of Mute Swans overwintering in the Swan Spring has been increasing year by year, from 5 to > 500 birds over the past 30 years (Figure 3).

During December 2014, 7 Mute Swans were fitted with GPS tracking collars, and an additional 6 had were marked with coloured neck-bands in the Swan Spring area. Based on recent tracking data (Jia *et al*., 2024), they migrate to places such as Lake Ebinur, Lake Balkhash, Lake Alakol, and Lake Ulungu in Cental Asia, to breed or spend the summer. We know that fluxes in the size of the Central Asian population are influenced by movements of birds to and from Kazakhstan. The impact of avian influenza may also be a factor.

In contrast, the family that bred in Yining in September 2023 did not overwinter in the Swan Spring region. Interestingly only the male parent led the cygnets on a migration, and some people observed them flying westward along the Ili River, before they flew 400–600 km to Kazakhstan. It is presumed that they overwintered in the Kapchagay Reservoir or the Balkhash Lake area downstream of the Ili River.

In September 2024, through field observations, we discovered for the first time that even without parental leadership or guidance, young birds continued to practice flying in formation and had the urge to migrate. They left their breeding grounds at the end of September.

In recent years, a total of 118 Mute Swans and 3 Whooper Swans were rescued in the Swan Spring area. Among them, a male Mute Swan was injured by a slingshot or a crossbow by the local Xibe people in 2017. The male was treated and released 22 days later.

The threats faced by swans from various cases are diverse in China (Liu & Ma, 2017; Liu *et al*., 2019). They include: poisoning (for example, Carbofuran in Ulansuhai, Zhao, 2012), avian influenza (39 cases of H5N6 in Swan Spring, 35 cases of H5N8 in Shandong) (Li *et al*., 2020; Liu *et al*., 2021; Ma & Han, 2022), egg theft and delayed breeding seasons (in Ulansuhai Lake), environmental interference, nest abandonment, hunting, tourism, climate change, barbed wire, collisions, natural predators (such as foxes), wild dogs, fishing (such as hook ingestion or lead poisoning) (Zhang *et al*. 2024), specimen collection (Cheng *et al*., 1979), shore engineering, malnutrition of young cygnets (feather disorders), lack of food in winter (in Swan Spring), pollution (in Fangcao Lake), eutrophication of water quality (hypoxia), immigration and population pressure, various lights, low altitude filming by drones, dam construction, wetland reclamation, crossbows and iron clips, long-term excessive feeding on a single food, overexploitation of groundwater causing spring blockage, interruption of water flow, interception and salinization (such as in Ebinur), land use change, large-scale western development, aquaculture, large-scale agriculture development, poor legal management, policy oriented isolationism, false cultural perceptions (Ma, 2019), the impact of introducing a large number of Black Swans (*C. atratus*) (the harm caused by invasive alien species) (Liu *et al*., 2024) and wetland shrinkage or disappearance, etc.

As in other countries, Mute Swans approach humans at some man-made habitats (Tkachenko *et al*., 2022). Their breeding or wintering grounds tend to be located in large water diversion project areas, reservoirs, wetland parks, fish ponds, moats and other non-natural wetlands. Some birds which are protected, fed, or otherwise rescued by humans tend to thrive and reproduce well, but have long-term dependence on humans, or have lost their migratory habits.

On the other hand, in China, wild swans that enjoy long-distance migration and live in natural environments are more severely harmed. In recent years, poaching cases have increased significantly, with frequent occurrences in various regions (Liu & Ma, 2017; Liu *et al*., 2019). This is one of the main reasons why the population of wild Mute Swans in China and the rest of East Asia has remained at a relatively small size (880–1,000 for the population in West China, and 400 for the population in East China; less than 1,500 in total; Table 1) and has not changed much in the past 40–50 years. Unfortunately, the significant environmental degradation has not been offset by

Nine Mute Swan cygnets in the Swan Spring, August 2024. (**Photo:** Han Xinlin)

Table 1 - The information of main breeding grounds and population size of Mute Swans in East and West China

Population	No.	Location	No. of breeding families	No. of cygent per nest	Max. flock size (season)*	Source
Central Asia	01	Ili River, Xinjiang	6-10	5-9	800-900 (W)	This paper
(West China)	02	Ebinur, Xinjiang	6-10	4-5	400-600 (A)	This paper
	03	Ulungu, Xinjiang	16-20	4-5	200-400 (S)	Ma *et al*. 2000
	04	Others	6-10		80-100	This paper
Total			**34-50**		**880-1,000**	
East Asia	05	Ulansuhai, Inner Mongolia	30-40	4-8	300-400 (A)	Zhao *et al*. 2017
(East China)	06	Dalai Lake, Inner Mongolia	6-10	3-6	35 (S)	Zhao *et al*. 2008
	07	Zhengzhou, Henan	8-12	4-9	110-120 (W)	Henan News, 2024
	08	Ulansuhai, Inner Mongolia	2-4	4-6	153 (W)	Jia *et al*. 2024
	09	Others	10-20		7 (S), 400 (W)	Li *et al*. 2018, Meng *et al*. 2020
Total			**56-76**		**400**	

*__Note:__ "Season" refers to the time (abbreviation) when the maximum population size of Mute Swans appears, such as autumn (A), winter (W), and summer (S).

population increases in some small, localised areas (*e.g.* Swan Spring), so the population size remains low.

As we finished writing this article, we received a paper published by Liu *et al*. (2024) in Volume 15 of *Avian Research*, which shocked us greatly. Over the course of 20 years, 6,654 Black Swans were imported and bred in China, including 147 in > 30 nature reserves. This conservative number is more than twice the size of China's Mute Swan population (<1,500 birds in western and eastern China combined; Table 1).

Originally, in the distant western part of China (in Yingtamu Swan Spring, Yining County) about ten years ago, locals purchased eight Black Swans from Shanghai. Now they have become established and bred successfully in the wild (with 5–7 eggs per clutch). In China, Black Swans occupy the best habitat, are not afraid of people, and have received much attention and care, but there is now considered to be a high risk of them becoming an invasive species in many countries globally. They nest twice a year in some places and have almost no natural enemies. In comparsion with Mute Swans, they have similar behaviours, including food and the ecological niches which they occupy, and they also expand faster in numbers. The Chinese government has not yet realised the gravity of this issue, and there are no corresponding laws, regulations, and preventive measures, which makes us greatly concerned about the future of other indigenous species.

A family of five Mute Swan cygnets on Lake Ebinur in early August 2024. (**Photo:** Ma Ming)

by **Ma Ming, Han Xinlin** and **Cao Lei**

Acknowledgements

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The maximum overwintering population of Mute Swans reached over 900 in 2023–2024 at the "Swan Hot Springs" in the Ili River Valley, which is the location with the highest population size in China. (**Photo:** Chen Xueyi)

The Black-necked Swan (*Cygnus melancoryphus*)**: Emblematic bird of the Curaco de Vélez commune, Chiloé Archipelago, Southern Chile**

The Black-necked Swan (*Cygnus melancoryphus*) is a South American endemic species, with a distribution that ranges from southern Brazil to Tierra del Fuego. Its conservation status is classed as Least Concern internationally; in Chile, however, and specifically in the Los Lagos Region, it is classified as an Endangered species (MMA 2019). The commune of Curaco de Vélez is located on Quinchao Island, in the inland sea of Chiloé, Los Lagos Region, southern Chile. In this commune, the Black-necked Swan stands out as a charismatic species of its marine wetlands, recognized for its ecological importance and cultural value. This swan is part of the bio-cultural local identity of Curaco de Vélez and plays a key role in the conservation of the local marine wetlands. These wetlands provide feeding and resting sites and are crucial for their reproduction, which makes the commune of Curaco de Vélez a priority site for the Black-necked Swan's conservation.

In marine wetlands, Black-necked Swans are distributed according to the tidal cycle: during low tide periods they use the intertidal zone feeding on algae of the genus *Ulva* (for instance, *Ulva taeniata*), while during high tide they concentrate at the mouths of rivers and streams where these enter the sea (Cursach *et al*. 2010, 2015). They nest in the supratidal zone, building their nests on the ground, using small branches and leaves of shrubs, grasses, stones and shells of marine molluscs (Cursach *et al*. 2021). Traditionally, people living in marine wetlands collect algae, shellfish and fish. During the last 40 years they have also been harvesting Pelillo seaweed (*Agarophyton chilensis*). These communities receive environmental benefits from the Black-necked Swan, such as the removal of algae of the genus *Ulva* retained or settled in the Pelillo cultivation systems, releasing their competition for substrate and light to grow (Cursach *et al*. 2015).

The Black-necked Swan is a keystone species from an ecological point of view and also has a deep cultural significance for local communities. In the commune of Curaco de Vélez, this bird has been integrated into the cultural identity of its inhabitants and its image is historically used in the different symbols that have represented the commune (Figure 1). One of the main emblematic festivities celebrated in Curaco de Vélez is the "El Cisne" Song Festival, which during the summer of 2024 commemorated its 29th version. It is one of the most important musical events in the south of Chile, and its award is a statuette of the Black-necked Swan. Also, the image of the swan is used in different graphics, artistic representations, decorations and emblematic representations.

Curaco de Vélez is recognized for its sheep wool handicrafts, which integrate weaving and designs inspired by aquatic birds such as the swan. Certainly, the most surprising is the monument of the Black-necked Swan located at the entrance to the town (Figure 2).

Black-necked Swans in the Curaco de Vélez marine wetland, Quinchao Island, Chiloé Archipelago, southern Chile (**Photo:** C. Delgado)

This link between swans and local culture highlights the importance of conserving this species and its associated values and traditions.

The main marine wetlands of the commune are: Palqui, Huyar Bajo, Diañ, Chullec, La Planchada, Huenao, Changuitad and Bay of Curaco de Vélez. In the latter is located the town of Curaco de Vélez, the main urban settlement and capital of the commune. The marine wetland of Curaco de Vélez stands out for its abundant and diverse resident and migratory waterfowl, recognized as an Important Bird Area (IBA) and a Site of Hemispheric Importance of the Western Hemisphere Shorebird Reserve Network (WHSRN). In 2022, this wetland was legally declared a protected natural area in Chile, and named "Santuario de la Naturaleza Humedal Bahía Curaco de Vélez" (Figure 3). It covers 60 ha, integrating the beach, estuary, marsh and intertidal environments that make up the marine wetland of Curaco de Vélez.

The Fundación Conservación Marina (www.fcmarina.cl) is the driving force behind the creation of the Nature Sanctuary and is currently in charge of its administration, developing a participatory management plan for the protected area. This plan considers the Black-necked Swan as a conservation target and identifies its main threats, such as: irresponsible pet owner behaviours, water pollution and solid waste, bad tourism practices, motorized vehicle traffic, and climate change.

Additional emerging threats include invasive alien species, specifically the American Mink (*Neovison vison*), and highly contagious viral diseases such as avian influenza. The management of this Nature Sanctuary involves implementing specific measures aimed at ensuring the protection of the Black-necked Swan, its habitat, food availability, and the stability of environmental conditions necessary for its reproduction and well-being (FCM 2024).

The Black-necked Swan, as a natural symbol of Curaco de Vélez and a conservation target of the Nature Sanctuary, faces a challenging future due to the multiple threats that affect it. Protecting this majestic bird and ensuring the conservation of its habitat is an ecological imperative and a way to preserve the biocultural heritage of Curaco de Vélez and Chiloé as a whole. The success of these efforts will depend on the continuity of effective management of the area, scientific monitoring, and the participation of local communities such as the Municipality, Tourism and Environmental Committee and schools.

by **Jaime A. Cursach, Claudio Delgado, Daniela Ruz, Ana Pfeifer** and **Paulina Mansilla Häeger**

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Figure 1: Logos used by different local organisations in the commune of Curaco de Vélez, composed of images of Black-necked Swan

Figure 2: Black-necked Swan monument at the entrance to Curaco de Velez town, Quinchao Island, Chiloé Archipelago, southern Chile

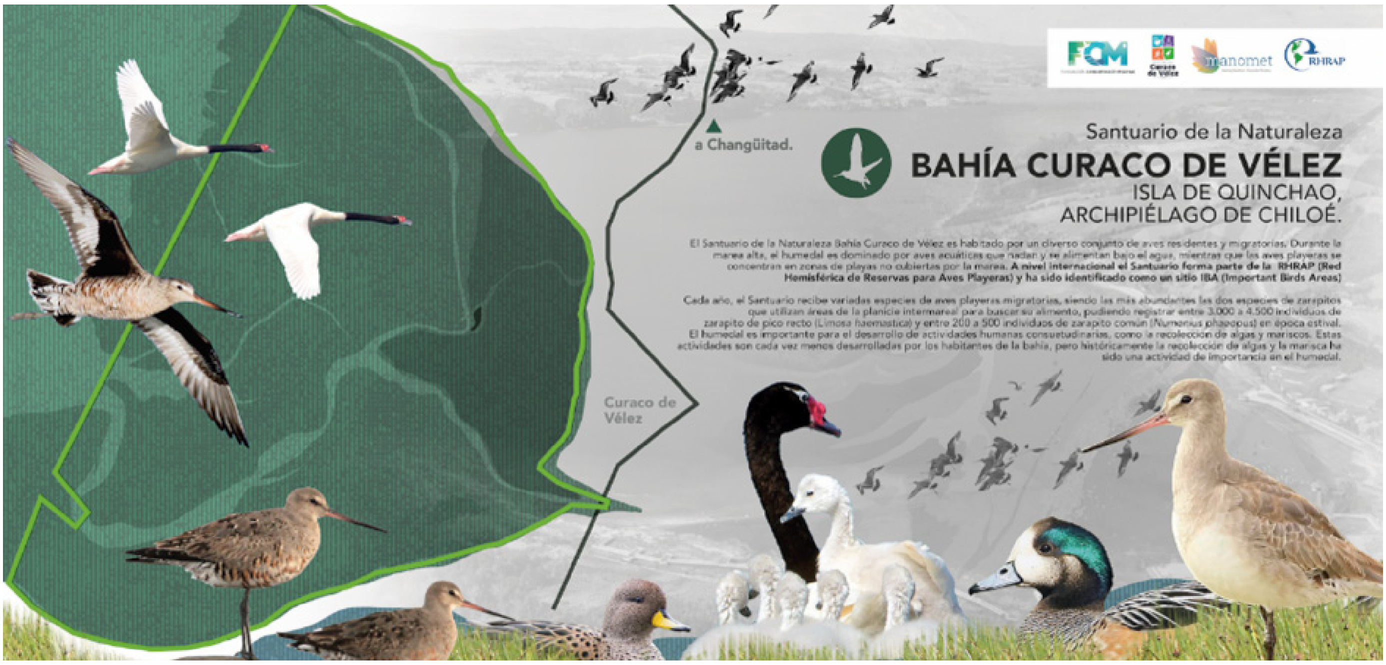

Figure 3: Infographic installed in the Santuario de la Naturaleza Bahía Curaco de Vélez, Quinchao Island, Chiloé Archipelago, southern Chile.

Current status of the Coscoroba Swan (*Coscoroba coscoroba*) in the Los Lagos Region, southern Chile

Figure 1: Group of Coscoroba Swans swimming in the Amortajado wetland, Maullín commune, southern Chile (**Photo:** C. Delgado)

The Coscoroba Swan (*Coscoroba coscoroba*) is a waterbird easily recognizable by its completely white plumage, pink bill and legs (Figure 1), and its distinctive honk ("ko-ko-ro-ko…"). It primarily feeds on vegetation, along with invertebrates and occasionally small fish (Martínez-Piña & González-Cifuentes 2017). It is distributed in southern South America, with populations ranging from southern Brazil, Argentina, Uruguay to central and southern Chile (BirdLife International 2016).

In Chile, the Coscoroba Swan can be found in wetland areas from the Valparaíso Region (33°S) to the Magallanes Region (53°S). Los Lagos Region (41-44°S) is located at the central latitude of this extensive zone. In terms of geography in Los Lagos Region the intermediate depression and the Coastal Range submerge, which transitions from a continuous coastline to the other fragmented by archipelagos, channels and fjords distinctively in Chilean Patagonia. Along the coasts of Los Lagos Region, there are various marine and estuarine wetlands recognized as important sites for the conservation of waterbirds and migratory shorebirds (Delgado *et al*. 2022a). Among these, the coastal wetlands of the Maullín River (41°S) are some of the most diverse sites for waterbirds along the Chilean coast (Delgado *et al*. 2022b).

The aim of this study is sharing an analysis of the existence of the Coscoroba Swan in Los Lagos Region using recordings of eBird database, identifying important sites and the main conservation challenges for the species.

The eBird database (2024) was accessed, revealing records of the Coscoroba Swan in the Los Lagos Region from January 2018 to August 2024 (Figure 2). All data used (n=742 records) included the number of individuals observed, sorted by date, location of the observation and the commune to which each location belongs.

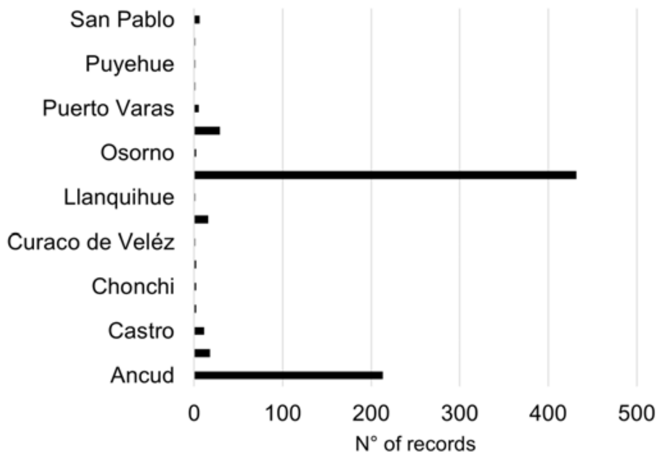

Figure 2: Number of Coscoroba Swan records in different communes of the Los Lagos Region, southern Chile, obtained from the eBird database, between January 2018 and August 2024.

The analysis results show that the records of the Coscoroba Swan in the Los Lagos Region are spatially concentrated in the Maullín Commune, followed by the Ancud Commune (Figure 3). These two communes have the 86.7% of the total analyzed records.

In the Maullín Commune, the Coscoroba Swan records come from sites located within or near the Maullín River Wetlands Nature Sanctuary. The main sites include: Amortajado Wetland, Las Lajas Wetland, Lepihué Wetland, Cululil, and Quenuir Lagoon.

The Maullín River Wetlands Nature Sanctuary has significant values for the abundance of Coscoroba Swans, specifically in the Amortajado Wetland and Quenuir Lagoon (Delgado *et al*. 2022b). This Nature Sanctuary has nine conservation targets, one of which is the "Totora Marsh Wetlands," an important habitat for feeding and nesting waterbirds like the Coscoroba Swan (FCM 2023).

In the Ancud Commune, the Coscoroba Swan records are mainly concentrated in the marine wetlands of Caulín and Punta Pugueñún, both located near the southern shore of the Chacao Channel. The Chacao Channel separates the mainland from the Isla Grande of Chiloé, connecting the Pacific Ocean with the inland sea, specifically the Gulf of Ancud and Reloncaví Sound. Marine wetlands with Coscoroba Swan records are also found in the communes of Puerto Montt, Calbuco, and Hualaihué (Figure 3).

On the other hand, when ordering the abundance data in a time series, it is observed that the number of individuals observed increases during the summer season (Figure 4). In summer the number of people observing birds and uploading their records to eBird increases, resulting in an imbalance in the 'sampling effort' that prevents us from venturing an estimate of the population size of the Coscoroba Swan in the Region. However, with the available information on the number of individuals observed per record, we calculated measures of central tendency and obtained the following values for the Region: Mode= 2 ind., Median= 4 ind., Mean= 11.8 ind., Standard Deviation= 18 ind., Min. Range= 1 ind., Max. Range= 140 ind.

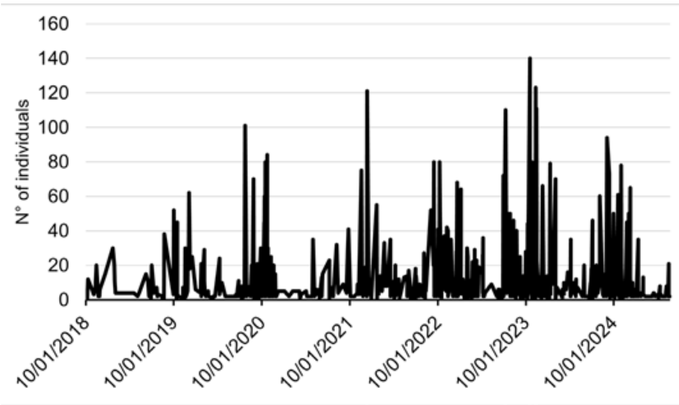

Figure 4: Number of Coscoroba Swan individuals observed from January 2018 to August 2024, in the Los Lagos Region, southern Chile, recorded in the eBird database.

Of the total analyzed records, 72.9% indicated abundances less than 10 individuals. The highest abundances of Coscoroba Swans in the Region were recorded at the following sites: Amortajado Wetland (140 ind., on January 27, 2023), Las Lajas Wetland (80 ind., on December 24, 2021), Caulín Wetland (121 ind., on March 22, 2021), and Punta Pugueñún (111 ind., on February 23, 2023).

Regarding the breeding population of the Coscoroba Swan in the Los Lagos Region, the main nesting site is located in the Maullín River Wetlands Nature Sanctuary, specifically at Quenuir Lagoon (Table 1). This wetland provides food and shelter year-round for this and other species of waterbirds (Cursach & Delgado 2023).

The species' reliance on specific wetlands for breeding makes it vulnerable to various threats that affect the quality of these habitats. The main threats identified for Coscoroba Swan conservation are: wetland habitat destruction and loss, property development, water pollution, invasive exotic species such as the American Mink (*Neovison vison*), irresponsible pet ownership, and poor tourism practices.

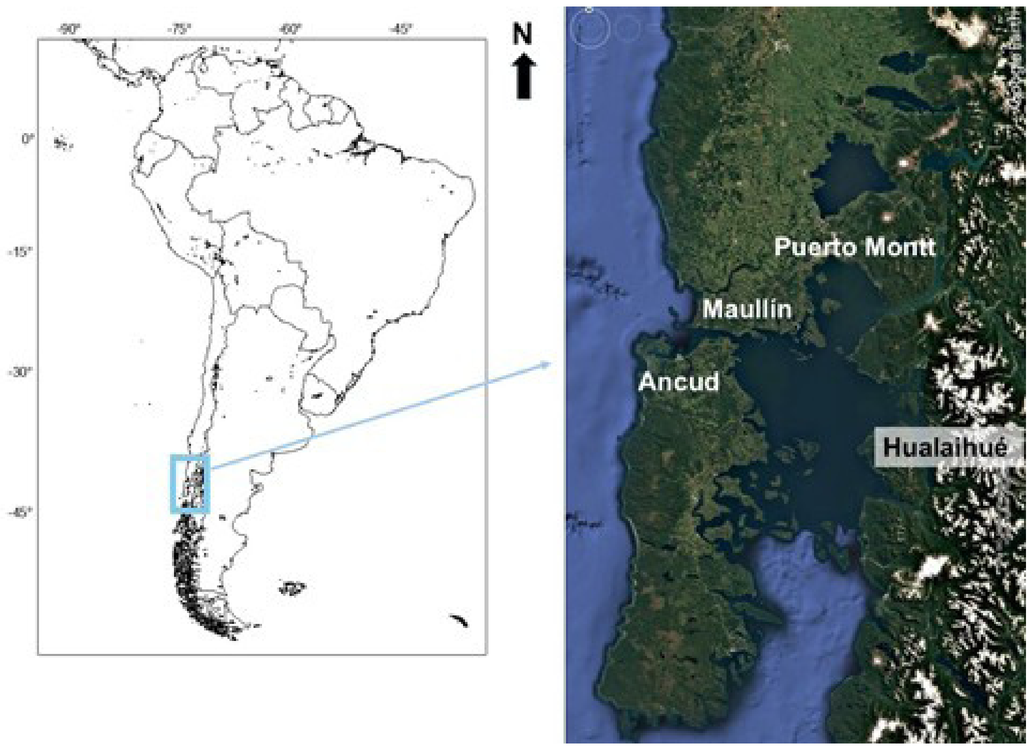

Figure 3: Map of the geographic location of Los Lagos Region, southern Chile, detailing the most important communes for the study results.

Table 1: Observations on Coscoroba Swan nesting, from January 2018 to August 2024, in the Los Lagos Region, southern Chile, recorded in the eBird database.

Date	Observation
Quenuir Lagoon, Maullín commune	
28/10/2017	An adult bird nesting.
28/09/2019	An adult bird nesting.
05/10/2019	An adult bird nesting.
10/10/2019	An adult bird nesting.
23/08/2020	An adult bird nesting.
17/10/2020	An adult with two cygnets.
23/10/2020	An adult with two cygnets.
22/11/2020	An adult with one chick.
18/11/2021	An adult with six cygnets.
22/01/2022	An adult with four cygnets.
08/10/2022	An adult bird nesting.
13/11/2022	An adult with four cygnets.
20/11/2022	A pair with four cygnets.
15/08/2024	An adult bird nesting.
La Poza Wetland, Hualaihué commune	
14/10/2023	An adult with two cygnets.
25/11/2023	An adult with one chick.

Finally, it is necessary to develop specific and ideally simultaneous population estimates on the abundance of the Coscoroba Swan in the different wetlands of the Region. Strengthen conservation efforts in sites of importance for the reproduction of this species, such as Quenuir Lagoon in the commune of Maullín. Identify new nesting sites. As well as developing environmental education and citizen science campaigns to promote knowledge, care and protection of the Coscoroba Swan in the Los Lagos Region.

by **Jaime A. Cursach, Claudio Delgado, Daniela Ruz, Ana Pfeifer** and **Paulina Mansilla Häeger**

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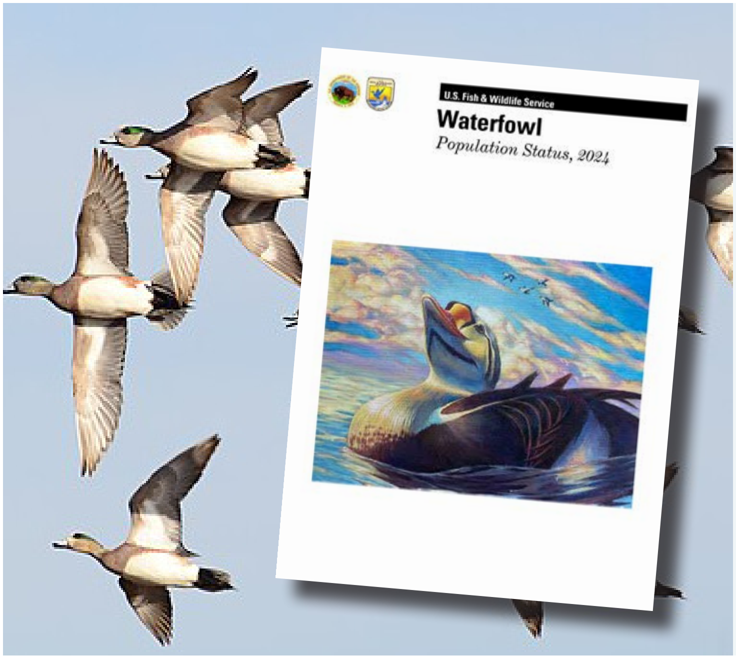
Coscoroba Swans in the marsh at the Amortajado Wetland, Maullín commune, southern Chile (**Photo:** C. Delgado)

Pair of Coscoroba Swans swimming next to a group of Red-gartered Coot (*Fulica armillata*) in the Amortajado Wetland, Maullín commune, southern Chile (**Photo:** C. Delgado)

Return of the Trumpeter film

"The Return of the Trumpeters" – a film produced by Steve Devon on the remarkable recovery of the iconic Trumpeter Swan (once hunted nearly to extinction in North America) – is being shown on the American Public Broadcasting System (PBS) television network during 2025. This beautiful film is a project of The Trumpeter Swan Society, and includes interviews with many of the people involved in the restoration programme, as well as a good deal of information on Trumpeter Swans. Apart from the PBS screenings, at this point it does not seem to be available on other sites.

(**Photo:** J. Hudgins / USFWS)



Waterfowl Population Status in North America, 2024

The U. S. Fish and Wildlife Service has published their status report for waterfowl:

U.S. Fish and Wildlife Service. 2024. Waterfowl Population Status, 2024. U.S. Department of the Interior, Washington, D.C. USA.

This report contains brief status updates for both Tundra and Trumpeter Swans. All Waterfowl Population Status reports are available from the US Fish and Wildlife website: https://www.fws.gov/library/collections/waterfowl-population-status-reports.

Update on the 2024 H5N1 Influenza A Virus Outbreak in the United States

The H5N1 influenza virus has been identified in 189 dairy cattle herds in 13 states (Texas, Kansas, Michigan, New Mexico, Ohio, Idaho, South Dakota, North Carolina, Colorado, Minnesota, Wyoming, Iowa, and Oklahoma) as of 8th August. In addition, the H5 influenza virus has been detected in 14 humans since 2022; 10 cases were linked to exposure in poultry and four cases following exposure to dairy cows. An estimated 230+ people have been tested after exposure to infected animals. Over 4,500 people have been monitored after exposure to infected animals. Nine of the 14 H5 human cases reported in the US have been confirmed as H5N1.

Highly pathogenic avian influenza (HPAI) A(H5) viruses have been detected in U.S. wild aquatic birds, commercial poultry and backyard or hobbyist flocks beginning in January 2022. These are the first detections of HPAI A(H5) viruses in the U.S. since 2016. Preliminary genetic sequencing and RT-PCR testing on some virus specimens shows these viruses are HPAI A(H5N1) viruses from clade 2.3.4.4. As of 8th August, 2024, the HPAI A(H5) viruses have been identified in 1,172 outbreaks in 48 states since 2022. Over 100 million U.S. wild aquatic birds, commercial poultry, and backyard or hobbyist flocks have been affected during this outbreak. The HPAI A(H5) viruses have been identified in 9,715 wild birds in 50 states since 30th December, 2021.

The FDA announced results from a study to further confirm that pasteurization is effective at inactivating Highly Pathogenic H5N1 Avian Influenza (H5N1 HPAI) virus in fluid milk and other dairy products made from pasteurized milk. The study – the only one to date designed to simulate commercial milk processing – found that the most commonly used pasteurization time and temperature requirements were effective at inactivating the H5N1 HPAI virus in milk. These results complement the FDA's initial retail sampling study in which all 297 samples of dairy products collected at retail locations were found to be negative for viable H5N1 HPAI virus.

Monitoring and research continue to inform responses to this latest outbreak of H5N1.

WILDLIFE MANAGEMENT INSTITUTE OUTDOOR NEWS BULLETIN, 78 (8). August 2024.

https://wildlifemanagement.institute/brief/august-2024/update-2024-h5n1-influenza-virus-outbreak-united-states

Trumpeter Swan in Yellowstone National Park, USA (**Photo:** N. Herbert / Yellowstone NP)

James G. King (1927 - 2024)

by **C. D. Mitchell** (edited from original article by Julian Fischer)

Jim King came to Alaska in 1949 to begin a career in waterfowl management, but over the succeeding decades his career spanned across many taxa and paved a legacy of habitat conservation.

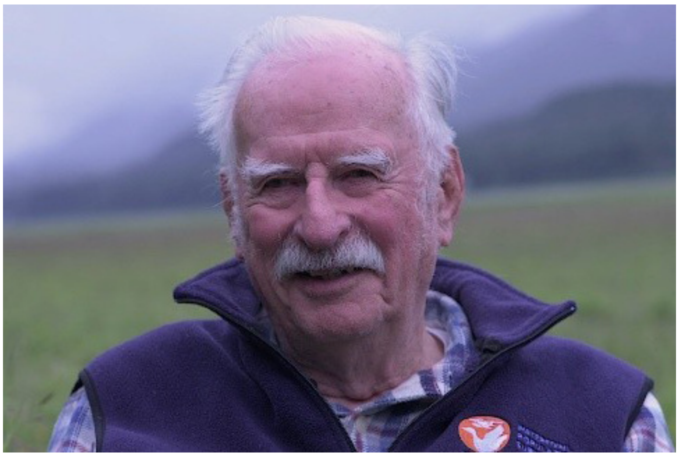
After learning to fly aircraft on wheels, skis and floats, Jim was selected as the first Refuge Manager of the Clarence Rhodes National Wildlife Refuge, precursor to the Yukon Delta National Wildlife Refuge. From there he was recruited to Juneau as Supervisor of Waterfowl Investigations, a program that ultimately morphed into the Alaska Region of Migratory Bird Management. Starting in the early 1960s Jim flew the Waterfowl Breeding Population and Habitat Survey in Alaska and the Canadian Yukon, then trained his successor to take over the role. Jim worked statewide, always with an eye for identifying important habitats in Alaska and beyond.

His legendary duck roundups in Yukon Flats (over 22,000 ducks banded in three years) revealed to the public the breadth of migratory pathways previously unknown. This banding work, along with his waterfowl surveys of Yukon Flats was instrumental in the Secretary of Interior's decision to oppose the proposal to build a dam on the Yukon River that would have flooded an area the size of Lake Erie. Jim recognized the power of data and used his survey results to drive the selection of refuge boundaries during the Alaska National Interest Lands Conservation Act days, resulting in permanent protection of these national treasures including the Yukon Flats NWR. Jim's surveys on the North Slope identified and promoted the Teshekpuk Lake region as a critical molting ground for geese from Canada, Russia, the Yukon Delta, and the Arctic Coastal Plain - a discovery that helped create special conservation status of this region within the National Petroleum Reserve. Jim designed and conducted the first range-wide census of Trumpeter Swans in Alaska in 1968 when the species was in peril across North America. Jim's initial statewide Trumpeter Swan survey planted the benchmark that proceeded with the species' recovery and his resulting spatial data has been used countless times in protection of nesting habitats in Alaska. Beyond waterfowl, Jim worked on captive breeding rare waterfowl, Bald Eagles and seabirds.

Jim authored and coauthored dozens of published papers and book chapters and went on to publish his own autobiography, "*Attending Alaska's Birds*". This book is a tremendous historical resource about waterfowl and their habitats, and overall conservation in Alaska. Retirement in 1983 was just an administrative action for Jim and he remained highly engaged in conservation activities for decades. In "retirement" Jim wrote the successful petition to list the Steller's Eider and Spectacled Eider for protection under the Endangered Species Act, served on the Citizens Oil Spill Advisory Committee that was formed after the Exxon Valdez oil spill in Prince William Sound, served as President of the Trumpeter Swan Society, helped establish the Bald Eagle Research Institute in Juneau, and remained an active aerial survey observer and pilot mentor. In 1990 he created the first issue of "*Trumpetings*" – the Trumpeter Swan Society's newsletter (published three times a year) – which continues to this day.

Jim and his wife Mary Lou received the Chevron Conservation Award in 1989 for their long-standing conservation work in Alaska. Jim was awarded the Distinguished Service Award in 2002 by the U.S Fish and Wildlife Service, the highest Departmental honor award that can be granted to a career employee.

This only scratches the surface of Jim King's contributions to migratory bird conservation in Alaska. Jim was an exceptional person in an extraordinary place. What Jim accomplished in his life is a hard act to follow.

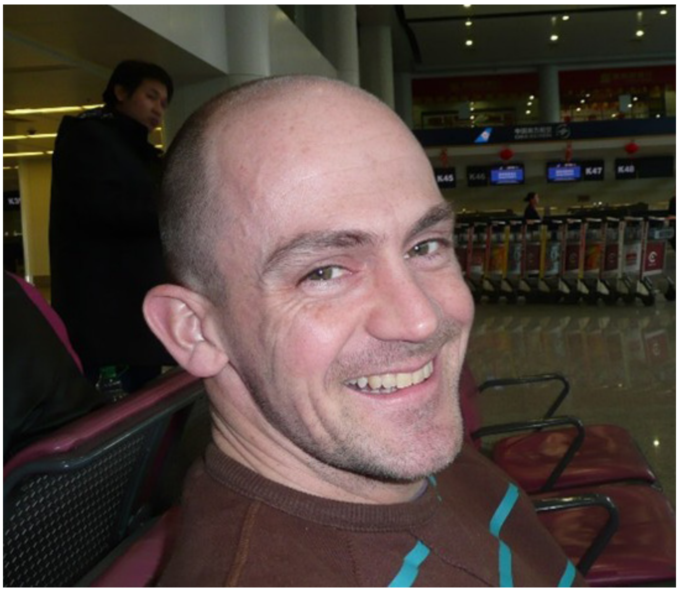


Richard Hearn (1971 - 2024)

by **Kane Brides**

It is with a heavy heart that we announce the sad news that our friend and valued colleague, Richard Hearn, has sadly lost his battle with illness.

Rich will be known to many for he has been instrumental not only in the monitoring and research of wildfowl species in the UK and Europe, indeed he has worldwide too. Rich started his career at the Wildfowl & Wetlands Trust (WWT) back in 1993, when the Trust hired him to plan an expedition to Argentina to search for Brazilian Merganser, in which he participated from June - October 1993. It was this expedition that sparked Rich's interest in studying wildfowl and on returning, he then went on to work on non-native Ruddy Ducks (in the UK) and Pink-footed Geese (in the UK and Iceland). In 1995, Rich took on a full-time post as a Ringing Assistant, coordinating WWT's bird capture and ringing activities, along with working closely with UK bird ringers to increase capture and marking effort.



Rich went on to work on a range of mostly international waterbird conservation projects, including numerous population monitoring and assessment projects and he led the UK's Goose & Swan Monitoring Programme for several years. Rich also worked on species action planning and recovery for Baer's Pochard and European seaducks, building capacity for waterbird monitoring in the African-Eurasian and East Asian flyways, and other issues such as sustainable hunting and goose-agriculture conflict.

He travelled extensively during his time at WWT including to Iceland to work on Pink-footed Geese and Whooper Swans, to Russia (to ring Bewick's Swans), Bulgaria (Red-breasted Geese), China (Spoon-billed Sandpipers), Bangladesh, Kuwait, Dubai and Nigeria (capacity building work), along with attending many meetings of parties and conferences over the years.

From 2019, Rich worked for WWT's Policy & Advocacy team, focusing on international issues. This involved closely working with other teams at WWT to secure changes to policy, strategy and legislation among key international stakeholders, including multilateral environmental agreements such as the Ramsar Convention on Wetlands and the African-Eurasian Migratory Waterbird Agreement.

His passion for birds, especially waterbirds and their monitoring, status and conservation was infectious. He was always kind with his time and knowledge and always keen to pass this on to younger scientists. As the Global Chair of the IUCN's SSC Duck Specialist Group, he provided strong and sustained promotion to the Pan-European Duck Symposia, with a particular support to students and young duck scientists. We all owe him a lot. The waterbird world will be a different place going forwards without Rich Hearn, he leaves a huge hole and will be desperately missed.

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Coscoroba Swan (**Photo:** Dubi Shapiro / AGAMI)