Swan News

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Newsletter of the Wetlands International / IUCN SSC Swan Specialist Group

About the Swan Specialist Group

The Wetlands International / IUCN SSC Swan Specialist Group (SSG) is a global network of over 300 swan specialists from 38 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.

Swan Specialist Group Committee and coordinators

This issue of Swan News was edited by Carl D. Mitchell (USFWS, retired), Jeff Snyder (Western Oregon University) and Eileen C. Rees (WWT).
Typesetting and layout by Colette Hall (WWT).
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Contents

Editorial

Welcome once again to the Wetlands International / IUCN Swan Specialist Group's (SSG) annual newsletter. The purpose of the newsletter is to keep SSG members, and others who may read it, informed as to what the group's members are doing and what is happening with swan research, management and conservation around the world. Hopefully this encourages and inspires new thinking and new ideas for swan management and research.

I feel obliged to remark again, that the newsletter would not exist but for the contributions of SSG members and others. This issue, I would like to especially express my appreciation for the hard work of Eileen Rees, Jeff Snyder, and Diana V. Solovyeva who helped me by clarifying information. As always, Colette Hall, who does the layout, deserves our accolades and gratitude. Your own contributions, past, present and hopefully future, are all greatly appreciated as well. Thank you all.

Speaking of contributing articles to this newsletter, it is difficult to take time to share what you are working on with others, but communicating what you've learned among your peers is critically important. It is also important to share with others who may not be as well informed about swan biology and conservation. A recent paper by Dominic McAfee, Zoe A. Doubleday, Nathaniel Geiger and Sean D. Connell (2019. Everyone Loves a Success Story: Optimism Inspires Conservation Engagement. *BioScience* 69(4):274–281) suggests that sharing positive news or findings inspires an increased interest in conservation. This is not to ignore real problems, merely to share good news. One good example of this is the increasing continental population of Trumpeter Swans, with numbers and distribution steadily increasing in most areas. International censuses scheduled for the migratory swans in Europe during January 2020 should indicate whether Whooper Swan numbers are also continuing to increase, and whether the decline in the NW European Bewick's Swans since 1995 has been halted and reversed. The fact that some species or flocks in certain areas are not growing should not conceal the overall picture. This does also not imply that we should ignore problems. In fact the good news about general population growth can help focus resources and interest on the flocks that still need more work to understand. So despite the time and effort it may entail, consider making sure that colleagues, conservationists and the public know what you're doing, and why. It may help swans in unexpected ways.

With that, I leave you to the rest of this issue of the SSG newsletter. I hope you enjoy it, and I hope that you will contribute to future issues as you are able. Please remember to provide us with any feedback, positive or negative. (Just be constructive!)

Carl D. Mitchell

Whooper Swans at Lake Kussharo, Japan (photo: Richard Belson)

Announcements

International Bewick's and Whooper Swan Census 11/12 January 2020

January 2020 sees the next of the five-yearly International Bewick's and Whooper Swan Censuses take place across Northwest Europe. The coordinated censuses, organised by the Wetlands International / IUCN SSC Swan Specialist Group together with National Count Coordinators and Wetlands International, aims to assess the population size, distribution, breeding success and habitat choice for: 1) the Northwest European Bewick's Swan , 2) the NW Mainland Europe Whooper Swan; and 3) the Icelandic Whooper Swan.

During the 2020 census, we also aim to undertake a comprehensive survey of Bewick's Swans in the Caspian and Black Sea regions to provide better evidence for the apparent increase and change in distribution of the Caspian population. Additionally, we hope to extend the censuses to include comprehensive counts of the Black Sea/East Mediterranean and the Caspian/West Siberian populations of Whooper Swan.

The internationally coordinated swan censuses not only give invaluable information on trends in numbers for each population but, by aiming to count all swans at their wintering sites, provide the total population size data used to determine sites of national and international importance for the species. They also describe any major shifts in site or habitat use over time (including for areas not covered by the International Waterbird Census [IWC]), and provide a comprehensive measure of the percentage of juveniles in flocks across the wintering range.

Obtaining data on the status of Bewick's Swans is particularly important in 2020 for assessing the effectiveness of conservation initiatives undertaken as part of the AEWA International Single Species Action Plan (ISSAP) for the NW European Population, and for throwing light on whether the Caspian population of Bewick's Swans is increasing and shifting in distribution to southeast Europe.

If you would like to participate in the census, please get in touch with your IWC National Organiser or contact the appropriate swan population coordinator: see below.

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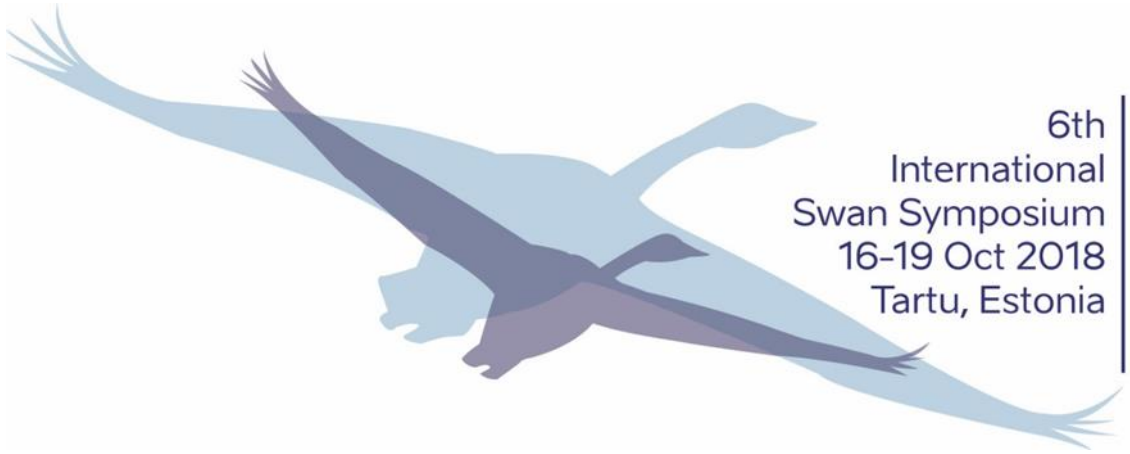
Sixth International Swan Symposium

Eileen Rees & Leho Luigujõe



The 6th International Swan Symposium (6th ISS) of the Wetlands International/IUCN-SSC Swan Specialist Group (SSG) was held at the Estonian University of Life Sciences in Tartu, Estonia, from 16–19th October 2018. International Swan Symposia have been held at *c.* 10 year intervals since the first meeting, held at Slimbridge, Gloucestershire, UK back in 1971, but SSG members resolved during the 5th ISS (at Easton, Maryland, USA in February 2014) that the group should meet more frequently. It is therefore gratifying that the gap has reduced to four years, and we will aim to continue convening swan symposia at 4–5 year intervals in future years. An excellent scientific programme was developed by Kevin Wood, chair of the Scientific Committee, together with committee members Lei Cao, Preben Clausen, Craig Ely, Eileen Rees, Jeff Snyder, Diana Solovyeva, Radosław Włodarczyk and the eminent Estonian ornithologist Aivar Leito (who sadly died just before the meeting). Overall, a total of 101 scientists attended from 17 different countries (Belgium, Belarus, China, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Latvia, Lithuania, Netherlands, Poland, Russia, Sweden, UK and USA), with information from most of these countries presented during the meeting.

The talks and poster presentations given during the symposium were of a generally high standard and covered a range of topics, including the results of long-term monitoring programmes (*e.g.* the international censuses of migratory swans in Europe), conflict issues (notably the increase in non-native Mute Swans in North America), and use of novel techniques which *inter alia* provided new insight into Bewick's Swan migration routes in East Asia, and also on habitat changes (identified by analysing core samples) in the swans' European breeding areas. The plenary talk reviewed current knowledge on the conservation status of the world's swan populations, which are mostly increasing, but major gaps in knowledge were identified. It was particularly pleasing to hear from the "next generation" of swan researchers, with five PhD students (two from UK, one from Netherlands, one from China and one from the USA) giving updates on their studies. Such quality work is providing great insight into the swans' life-cycles and their responses to rapidly changing environments in different parts of the globe.

In addition to the presentations, two workshops were held during the 6th ISS. A full day was devoted to the implementation of the Bewick's Swan Action Plan, which was adopted by the African-Eurasian Migratory Waterbird Agreement (AEWA) in 2012 and is scheduled to continue until 2022. The morning saw several presentations outlining work undertaken to date under the auspices of the Action Plan, including an update of national actions in place for the implementation of the Action Plan, from information provided by the AEWA Focal Points from each country. In the afternoon session, which was chaired by Prof Chris Spray and facilitated by Nina Mikander (for the AEWA Secretariat), members of the Bewick's Swan Expert Group (BSEG) discussed a rolling work programme for taking the Action Plan forward over the next 4–5 years.

The second workshop held during the symposium – on swan monitoring programmes – resulted in a set of recommendations for monitoring work particularly in Europe, as it was noted that assessments of trends in

numbers and total population size are undertaken regularly in North America. Recommendations from the swan monitoring workshop, presented on page 8, has as the main immediate milestone of undertaking the next international swan census in mid-January 2020. Census dates thereafter are to be considered in conjunction with EU and AEWA reporting schedules.

Two films were shown during the conference. The beautiful "*The Wind Sculpted Land*" by Joosep Matjus depicted Estonian wildlife throughout the year and the "*Mystery of the Missing*" from the Flight of the Swans (FotS) project was shown for the first time. Sacha Dench, who paramotored the length of the Bewick's Swans' migration route from the their breeding grounds in the Nenetskiy region of Russia to wintering sites in the western Europe (see *Swan News 14* for more information about FotS) was in attendance to discuss a second more conservation-focussed film resulting from this initiative, which is scheduled for completion in autumn 2019.

Amidst the talks and workshops, the mid-conference excursion to Lake Peipsi, where about 1,200 Bewick's Swans were seen along the shore at Kallaste, including several colour-marked birds from Dutch, Belgian and British ringing programmes for the species. We were incredibly lucky with the weather and had a glorious day, with many other species also sighted. We were honoured in that the renowned Estonian folk musician Juhan Uppin played the Estonian harmonium at the conference dinner, including an Ukuaru waltz by the Estonian world famous composer Arvo Pärt. Those fortunate enough to join the post-conference excursion visited the wealth of Estonian habitats ranging from raised bogs to woodland meadows (which yielded Black Woodpecker and Crested Tit) and coastal bays, most notably the Matsalu Bay SPA and Ramsar site where the GPS-tagged Bewick's Swan named "Pola" was identified with her mate "Pyotr". A total of 110 bird species were observed during the excursion.

Prior to the 6th ISS, Jan Beekman and Bjarke Laubek stood down as SSG coordinators for the NW European Bewick's Swans and the NW Mainland European Whooper Swans, respectively, following many years involvement in Bewick's and Whooper Swan studies. We are immensely grateful to Jan and Bjarke for their significant contributions to our understanding of these populations, and anticipate that they will continue to maintain a keen interest in their future welfare!

The success of the 6th ISS would not have been possible without the full cooperation of the conference organisers: the Estonian University of Life Sciences, the Estonian Ornithologists Society, the SSG and the Wildfowl & Wetlands Trust (WWT). We are particularly grateful to the University for the help and facilities provided. We also thank Partners and Sponsors for supporting the symposium: AEWA, IUCN-SSC, Estonian Environmental Board, Estonian Environmental Investment Centre, Tartu City, Salibar OÜ, Salvest AS, Regio OÜ, Jardin OÜ, Pühaste Brewery OÜ and Tuulingu holiday house. A number of papers from the meeting have been published as a special issue of *Wildfowl* (*Wildfowl Special Issue No. 5*), and these are now available on the journal's website (**http://wildfowl.wwt.org.uk/**) where pdfs can be downloaded.

Members of the Swan Specialist Group at the 6th International Swan Symposium, Tartu, Estonia.

Recommendations

Swan Census Workshop on 16th October 2018
(during the 6th International Swan Symposium, Tartu, Estonia)

In the framework of a dedicated workshop on the international swan censuses held on the 16th of October: during the 6th international swan symposium.

- *Noting* that international censuses of Whooper and Bewick's Swans have been conducted across Europe at five-year intervals since the mid-1980s;
- *Aware* that censuses of Tundra Swans and Trumpeter Swans are conducted annually and at five-year intervals, respectively, in North America to inform Flyway Management Plans;
- *Recalling* that coordinated international censuses are needed for the determination of total population sizes, which in turn are used to identify sites of national and international importance for swan species;
- *Further recalling* that various international legal frameworks (such as AEWA and the EU Birds Directive) require reporting on population status and trends for migratory swan populations and the status of protected areas for these populations;
- *Appreciating* that there are species and populations of swan for which numbers and population trends are poorly understood;
- *Understanding* that there are barriers to maintaining count networks and obtaining comprehensive coverage of all sites where migratory swans occur;
- *Further understanding* that advance knowledge of census dates is important for planning and coordination.

The meeting participants therefore issued the following recommendations to ensure the continued and increased adequate monitoring of all swan populations to be implemented as a priority within the African-Eurasian flyway, and for internationally coordinated censuses to be extended to other regions wherever possible:

- The next coordinated international census of migratory Whooper and Bewick's Swans across Europe shall take place in January 2020;
- Given the relatively poor knowledge of Mute Swan population sizes within the African-Eurasian flyway, opportunities should be taken to include Mute Swan counts during the coordinated international census in 2020, to obtain updated information on population sizes and trends;
- Countries with breeding swan populations should make efforts periodically to monitor them on the breeding grounds;
- Noting that reporting on national and international population status is on a three-year cycle for AEWA and a six-year cycle for the EU, determine the frequency of subsequent (post 2020) international censuses to coincide with data being available for the respective reporting schedules in collaboration with the African-Eurasian Waterbird Monitoring Partnership;
- Encourage the relevant range states to move towards online data entry, where not already in place, and the use of apps for collecting waterbird monitoring data to improve feedback to observers and identify gaps in coverage so that these can be addressed;
- Results of international censuses are to be made available to the international census coordinator for each population, as agreed within the SSG, promptly (within two years), to allow for national reporting requirements;
- Data to be held securely by the respective national count coordinators (for national swan census data) and the SSG international census coordinators (for collated international census data);
- Summary data shall be made readily accessible, once verified, to all interested parties. Detailed site based data shall also be made available, once verified and with relevant permissions, to agreed users following consultation with the national and international census coordinators;
- Investigate possibilities for extending international censuses to swan populations where trends and total numbers are less well known;
- Investigate the possibilities of strengthening the use of ringing and ring re-sightings to assess levels of interchange between populations, in the first instance for Whooper Swans from the Icelandic and NW Mainland European populations.

Convenors: Preben Clausen & Colette Hall

Photographs: mid-conference excursion to Lake Peipsi, Estonia (by Leho Luigujõe)

Research projects and updates

Preliminary results of the international Bewick's Swan age count: 15–16 December 2018

Wim Tijsen & Kees Koffijberg

In the weekend of 15–16 December 2018, the 37th annual Bewick's Swan age count was held in ten different countries across Europe, as part of a programme monitoring the breeding success of the NW European population. The percentage of juveniles recorded in 2018 was much better than in 2017, but still below the level required to compensate for annual mortality rates.

Photograph: Bewick's Swans feeding with geese in the Netherlands (by Wim Tijesn).

Purpose of age counts

The Swan Specialist Group has monitored the NW European Bewick's Swan population carefully since the mid-1980s, to assess the conservation requirements for the species. This is important because historically the population size was small and, following an increase in numbers between the 1970s and mid-1990s, trends analyses show that it is now in decline. Indeed, having peaked at just under 30,000 birds in 1995, numbers dropped to 18,100 in 2010, and whether a slight recovery *c.* 20,000 birds in 2015 is maintained hereafter remains to be seen (Beekman *et al.* 2019). Age counts are an important tool for understanding such fluctuations in population size. Every five years the population size is monitored, and each year after the birds have arrived to the wintering grounds in NW Europe, we monitor their breeding success. These observations, which have been ongoing since 1982, show strong annual variation in the number of cygnets raised each year, as well as in the number of successful breeding pairs (*e.g.* Wood *et al.* 2016).

The next age count is due to take place during the weekend of 14–15 December 2019, in conjunction with the mid-monthly waterbird count in many countries.

The next complete international census of migratory swans in Europe and more widely will be held in mid-January 2020.

Breeding success – long term

Breeding success over the past 10 years has been rather poor; on average 9.1% juvenile birds were found in the population over this period (Figure 1). As a result - with an apparent adult mortality loss of between 15–23% per year (Wood *et al.* 2018) - the population size has declined since 1995 and whether this trend is continuing remains to be determined (Beekman *et al.* 2019).

Results from 2017 & 2018 age counts

In December 2017 and 2018, > 8,000 and > 9,000 Bewick's Swans were aged respectively (Table 1). In both years, many flocks were checked for cygnet percentages and brood sizes, and the average percentage of cygnets recorded was 3.9% in 2017 and 8.7% in 2018. Sample sizes were pretty good in both years, with *c.* 45% of the population checked last winter and > 40% of the population checked in 2017. Both winters were categorised as being very mild during the mid-December counting period. Poland made a major effort in 2018, with Przemek Wylegala and Radoslaw Wlodarczyk organising age counts for most of the main wintering locations in the country, where > 700 Bewick's Swans were present at the time! Such information will provide further insight into changing conditions on the wintering grounds associated with climate change, which makes it easier

for Bewick's Swans to remain at sites in eastern European countries into the winter months.

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 family. In 2018 we received information from 300 pairs with cygnets from seven countries, which is pretty good, and the average brood sizes in 2017 and 2018 were 1.61 and 1.87 cygnets per pair respectively.

Overall the 8.7% cygnets recorded in winter 2018/19 indicated that 2018 was a much better breeding season than 2017 (which was the worst since 2007), but still an average year. So it was not a year for building the population, and the results of the January 2020 census will determine how this has influenced trends in number in recent years.

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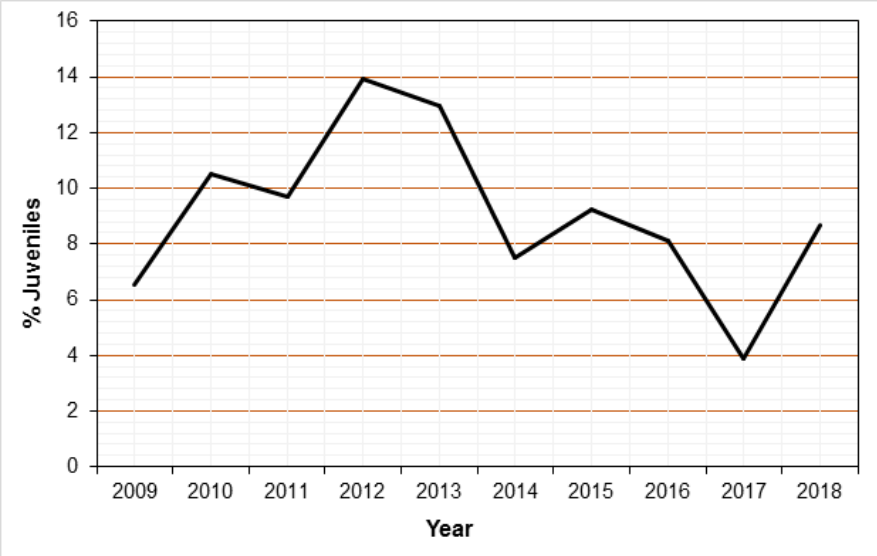

Figure 1. Breeding success for swans in the NW European population from 2009–2018, measured as the percentage of cygnets in the wintering flocks, recorded from winters 2009/10 to 2018/19 respectively.

Table 1. Summary of Bewick's Swan age counts recorded in each country during and 9–10 December 2017 and 15–16 December 2018.

Country	Total no. of birds aged		No. of adults		No. of cygnets		% cygnets	
	2017	2018	2017	2018	2017	in 2018	2017	2018
France	148	311	142	282	6	29	4.1	9.3
Belgium	88	74	85	51	3	23	3.4	31.1
Netherlands	2,067	3,878	2,015	3,648	52	230	2.5	5.9
UK	213	149	192	130	21	19	9.9	12.8
Germany	5,498	3,577	5,269	3,198	229	379	4.2	10.6
Poland	No info	718	No info	636	No info	82	No info	11.4
Denmark	350	555	333	512	17	43	4.9	7.7
Estonia	6	0	3	0	3	0	50	0
TOTAL	8,383	9,262	8,034	8,457	326	805	3.9	8.7

Do neck collar trackers affect survival in Bewick's Swans?

Diana Solovyeva

Studies of swan migration and winter distribution using GPS/GSM trackers attached to neck collars have become very popular in recent years. These trackers provide huge datasets during approximately two years of transmitting, but trackers also have a disadvantage because they can stay on a bird for the rest of its life. We want to know if wearing trackers effects survival of marked Bewick's Swans *Cygnus columbianus bewickii*. This project is a part of large-scale tracking project, led by Cao Lei from the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences.

The Chaun delta in Western Chukotka, Russia, supports approximately 1,000 Bewick's Swans during their moult and brood-rearing period in August. Nest density was among the highest reported for the species, averaging 2.00 nests/km^2, and ranging from 0.98 to 3.33 nests/km^2 during 2002-2018. Swans from the Chaun delta are known to winter in Japan (Kondratiev 1984; Zhang 2018). Hopefully more adult swans will be ringed (with no trackers) in the Chaun delta in the summer of 2019.

Ringed swans were reported by Japanese swan watchers in the winters of 2016/17 (nine swans); 2017/18 (33 swans) and 2018/19 (28 swans). We hope to continue receiving these observations in future winters. Survival probability of adult and juvenile swans will be estimated from reports by observers. Detectability will be estimated by weighting the number of individuals identified in winter *vs*. the number of tagged swans wintering in Japan in each year (based on tracking data), and mortality will be estimated from the detailed tracking data.

Swan specialists experienced in demographical statistics are welcome to join the project for data analyses.

Table 1. Number of Bewick's swans equipped with trackers and colour rings, and those equipped only with rings in the Chaun delta, Chukotka, Russia, 2016-18.

Year	No. fitted with trackers and rings		No. fitted with rings only	
	Adult	Juvenile	Adult	Juvenile
2016	29	0	1	4
2017	63	9	0	2
2018	31	14	3	22
Total	**123**	**23**	**4**	**28**

Figure 1. Adult Bewick's Swan with tracker attached to its neck collar, in Chaun delta, Chukotka, Russia (photo: Olga Prokopenko, IBPN FEB RAS).

Figure 2. Juvenile Bewick's Swan with tracker attached to its neck collar, in Chaun Delta, Chukotka, Russia (photo: Olga Prokopenko, IBPN FEB RAS).

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The re-establishment of Trumpeter Swans in northwestern Montana

Dale Becker

Figure 1. Dale Becker, Tribal Wildlife Program Manager, Confederated Salish and Kootenai Tribes, with a neck-banded Trumpeter Swan ready for transport to the Confederated Salish and Kootenai Tribes wetlands.

Trumpeter Swans *Cygnus buccinator* occurred historically in western Montana as a breeding bird, with early observations reported by explorers and naturalists during the summer months. Observations of the species in western Montana during the nesting season were reported by such early luminaires as Meriweather Lewis and William Clark, Father Pierre DeSmet, and E.S. Cameron. The most interesting account locally was the 1842 description by Father DeSmet of accompanying a group of Kootenai Indian hunters along the shores of Flathead Lake and collecting swans eggs. From his description, we can reasonably assume that they were foraging along the southern end of East Bay of the lake, possibly near today's Ducharme Point Fishing Access.

During the 1800s, the Hudson Bay Company attempted to fill a robust market for swan feathers, shipping some 108,000 swan skins to England from 1823-1880. Presumably, a large portion of those skins were from Trumpeter Swans. With the settlement of western Montana, early settlers no doubt relied upon local wildlife for subsistence, and large Trumpeter Swans likely provided food for some families when they were available. In addition to being large targets, swans were also probably fairly easy to hunt. The conversion of wetland areas to agricultural uses likely also decreased the number of available nesting and foraging areas for Trumpeters. The result was a decline in Trumpeter Swans and a constriction of their breeding range until only a small population of fewer than 100 existed in the Yellowstone National Park area.

Early Trumpeter Swan conservation efforts resulted in the protection of the species from hunting and the establishment of Red Rock Lakes National Wildlife Refuge to help preserve them from extinction. Those efforts, along with several translocation projects to move swans to other potential nesting areas and direct reintroduction projects in the upper Midwestern states, resulted in an increase in numbers in those areas. Trumpeter Swans however remained limited in numbers throughout much of their former range in the northern Rocky Mountains region of North America.

With a goal of re-establishing Trumpeter Swans to northwestern Montana, discussions of the potential for reintroducing Trumpeter Swans of the Flathead Indian Reservation began in the mid-1990s, with interest shown by the Confederated Salish and Kootenai Tribes (CSKT), Montana Fish, Wildlife and Parks (MFWP), the U.S. Fish and Wildlife Service (USFWS) and local individuals. After completion of an environmental assessment on the potential for a Trumpeter Swan reintroduction project, work commenced on locating a source of swans for use in the project. The outstanding abundance and quality of wetland habitats on the Flathead Indian Reservation seemed to provide an ideal location for a reintroduction programme.

Initial efforts were spearheaded by the CSKT and involved the use of Canadian-wintering Trumpeters captured in Oregon and cygnets captured in northwestern Alberta. Pablo National Wildlife Refuge proved to be an excellent release site, but none of the released swans returned to the area the year after release. In 2000, the CSKT Wildlife Management Program contracted with the Wyoming Wetlands Society to supply captive-raised Trumpeter Swans, and reintroduction of the first group of 34 year-old swans occurred in 2002. The released swans did well throughout the summer and fledged in the fall. Some mortalities caused by collisions of flying swans with overhead power lines, were recorded, but most survived the winter, and many moved to the lower Flathead River and spent the winter there.

Since the onset of the project, the Tribal Wildlife Management Program has worked with the Wyoming Wetlands Society' Trumpeter Swan Program and more recently the Montana Waterfowl Foundation to captive raise and release yearling Trumpeter Swans on the Flathead Indian Reservation. To date, 268 Trumpeters have been released, primarily at the Pablo Nationals Wildlife Refuge.

Although initial concerns about potential mortalities due to swans ingesting spent lead shot in wetlands and illegal shooting have not resulted in serious mortality levels, a significant number of swans have died as a result of collisions with overhead power lines. Tribal Wildlife Biologists have worked in cooperation with Mission Valley Power to install line markers to improve the visibility of power lines in areas of documented swan mortality or in areas heavily utilised by the swans. The Mission Valley Power staff has similarly provided some suggestions for marking the lines, to make them more visible to swans.

The ultimate goal of the project was the establishment of a viable nesting population of Trumpeter Swans on the Reservation and adjacent lands in western Montana.

The first productive nests were documented in 2004. Since then, at least 155 nesting attempts have been documented, and a minimum of 421 cygnets have been produced. Numbers of cygnets fledged during the period of 2016-2018 ranged from minimum of 60-67 fledglings each year. While nesting initially occurred on the Reservation, reintroduced Trumpeter Swans have also dispersed northward, and nesting pairs have become established in the Kalispell, Marion, Eureka and Glacier National Park areas in northwestern Montana. Nesting pairs of Trumpeter Swans, some of which may have originated with this project, have also become established, and are producing cygnets, in the Golden area in southern British Columbia.

The success of the reintroduction project is highlighted by the documentation of 258 Trumpeter Swans in this new population in the autumn of 2018, which compared favourably with the 252 swans counted in Wyoming, 203 in Idaho and 329 elsewhere in Montana. Wildlife managers in the three states are now investigating ways to link these small populations by investigating other potential reintroduction sites.

With success of this project, Tribal Biologists wanted to assess the long-term potential for viability of the re-established Trumpeter Swan population in northwestern Montana. A population viability analysis conducted by personnel at the University of Idaho indicated that this population has a high probability of both short-term and long-term viability.

Trumpeter Swans, once a locally-extirpated species in western Montana, are now commonly observed. Bird enthusiasts who wish to observe Trumpeter Swans should look at the wetlands in the Ninepipe and Kicking Horse Reservoirs during the summer months. From July to September of each year, 50-75 non-breeding Trumpeters congregate at Pablo National Wildlife Refuge during their annual moult. In the winter months, a large proportion of the local Trumpeter Swans in northwestern Montana migrate to the lower Flathead River from Dixon and Paradise to spend the winter. Some swans have been fitted with red plastic neck-bands with alpha-numeric identification numbers. If neck-banded swans are observed, the Tribal Wildlife Management Program would appreciate hearing of the details including the neck-band number, date and location of observations. This information can be provided to Dale Becker at **dale.becker@cskt.org** or +1 (406) 675-2700, ext.7278.

Figure 2. A pair of Trumpeter Swans with eight cygnets on a Confederated Salish and Kootenai Tribes wetland.

Trumpeter Swan recruitment and remige moult in the Sandhills of Nebraska

Heather M. Johnson

Trumpeter Swans *Cygnus buccinators* (hereafter TRUS) were reintroduced in the Sandhills region at Lacreek National Wildlife Refuge (NWR) from 1960 to 1962. This population of TRUS is referred to as the High Plains Flock (HPF) of the Interior Population (IP) of TRUS in North America. The population estimate of the HPF as of 2012 was estimated at 664 TRUS, and has had an average annual growth rate of 5.9% from 1990-2012. Of those swans, nearly 90% were thought to reside within the Nebraska Sandhills. While the HPF adult population continues to grow, annual cygnet production has remained somewhat stagnant over the last decade. Managers have also observed a trend of declining ratios of cygnets: adults from 1990-2012.

Breeding success of the HPF has not been thoroughly assessed since 1972 and only TRUS at Lacreek NWR were assessed. Though previous studies have estimated cygnet survival to fledging, there are no data on nesting propensity, hatch rates, and brood success of TRUS in the Nebraska Sandhills. Thus, further investigation of breeding success is needed to understand better why recruitment rates are declining.

Moult is a critical process in the annual cycle of birds because feathers are required for thermoregulation and flight feathers become worn and must be replaced. As with other waterfowl, TRUS will undergo simultaneous wing moult, rendering them flightless during this time.

Non-breeding TRUS gather to moult in flocks on large, open lakes and thus may be flightless as a group. In contrast, members of a pair of breeding TRUS will rarely be flightless at the same time and moult sequentially. For reasons unknown, who moults first can vary by population. In Alaska, male TRUS generally moulted first, where as in Montana, female TRUS were observed moulting first. Moult among breeding pairs appear to be correlated with the timing of. The asynchrony of remige moult among breeders may allow for both territory defence and brood protection. Though the original introduced TRUS in the HPF came from the Montana population, it is unknown if they follow the same moulting patterns.

Reference

Heather M. Johnson's Researchgate page.

Incubation behaviour and genetic attributes of Trumpeter Swans restored to Grays Lake National Wildlife Refuge

David A. Bush

The Trumpeter Swan *Cygnus buccinator* is North America's largest waterfowl and a species of conservation concern due to severe population loss during Euro-American settlement of North America. Wildlife agencies are reestablishing Trumpeter Swans by translocating swans into historically occupied habitat, including returning swans to Grays Lake National Wildlife Refuge (GLNWR) in southeastern Idaho. Trumpeter Swans were released from 1989-1991, but the population exhibits persistently high cygnet mortality. I examined two biological factors potentially related to cygnet mortality at GLNWR: (1) incubation behaviour of nesting adults and (2) genetic signals of inbreeding. Dysfunctional incubation behaviour leads to impaired cygnet development and subsequent post-hatch vulnerability. Inbreeding can express deleterious alleles and can impair cygnet development and subsequent performance. I used continuous videography to measure incubation behaviour in detail. To measure inbreeding, I extracted DNA from eggshell embryonic membranes and measured heterozygosity at microsatellite loci. I found no indication of dysfunctional incubation among adults. Cygnets had somewhat low levels of allelic diversity, but allelic diversity was similar to other swan populations. Adult incubation behaviour and inbreeding likely are not causes of elevated cygnet mortality.

Future research should focus on ecological factors of the marsh environment including food availability, parasitism, and length of breeding season for causes of cygnet mortality.

Mute Swan population recovery following the regulation of lead use in angling

Kevin A. Wood, Martin J. Brown, Ruth L. Cromie, Geoff M. Hilton, Conor Mackenzie, Julia L. Newth, Deborah J. Pain, Christopher M. Perrins & Eileen C. Rees

Figure 1: Mute Swans may ingest lead angling weights whilst feeding or searching for grit (photo: Kevin Wood).

Many species of waterbirds, such as Mute Swans *Cygnus olor* (Figure 1), are at high risk from lead poisoning as they live in habitats where recreational coarse fishing occurs (Haig *et al*. 2014; Grade *et al.* 2019). Swans consume discarded lead weights whilst feeding or whilst ingesting grit, which they do to aid their digestion of vegetation. Previous research reported that >15,000 lead weights (approximately 5kg) were found to have been deposited per hectare per year in areas where angling occurred (Bell *et al*. 1985). Lead is harmful to animals even at low levels of exposure, affecting survival and reproductive capability, via effects on immunocompetence, behaviour, mobility and the abilities to find food and evade predators (Blus 1994).

Conservationists have been vocal is in calling for greater regulations on the use of lead in the environment. In response to findings that lead poisoning was responsible for 4,000 Mute Swans per year and a 15% decline in population size between 1956 and 1978, the import, sale, and use of lead weights in the sizes most likely to be eaten by swans (0.06 – 28.35g) were all banned from January 1987 onward across Great Britain. In a recent study, we assessed how effective these regulations had been in halting and reversing the decline in Britain's Mute Swan population (Wood *et al.* 2019).

In the first part of our study, we used 39 years of data available from the Wetland Bird Survey (WeBS: Frost *et al.* 2016) to assess trends in Mute Swan population size in Great Britain between 1974 and 2012. We found that the regulation of lead fishing weights best explained the observed change in population size over time, with a large and rapid increase following the restrictions on lead (Figure 2). Lead regulation accounted for 82% of the between-year variation in Mute Swan population size (Wood *et al.* 2019). In stark contrast, other variables such as arable food supplies, river habitat quality, or winter air temperatures, had little effect on swan population size. Co-ordinated censuses carried out across Great Britain showed that the Mute Swan population increased from approximately 17,600 birds in 1978 to 31,700 in 2002 (Ward *et al.* 2007). Since the early 2000s, the size of the population has remained relatively stable.

In the second part of our study, we used post-mortem data on swans collected from around Britain to assess the changes in the percentages of Mute Swans known to die from lead poisoning in the periods before and after the introduction of regulations on lead angling weights. We found that prior to the regulations lead poisoning was the biggest single source of mortality amongst the swans, accounting for 34% of all individuals in our sample (Wood *et al.* 2019). However, the percentage of individuals dying of lead poisoning dropped from 34% to 6% following the introductions of the regulations in 1987 (Figure 3). This large reduction confirmed that lower lead-induced mortality was the likely driver of increased population size in the years following the regulations.

The results of our study showed that legal restrictions on lead angling weights succeeded in alleviating, although not eliminating, the impact of poisoning on Mute Swans. Our data showed that lead poisoning still accounts for 6% of Mute Swan deaths even after the restrictions on lead fishing weights. These cases could be due to the continued use of legal sizes of lead

fishing weights that were not covered by the regulations (*e.g.* weights below 0.06g and above 28.35g), the persistence of lead weights deposited before the regulations came into force, non-compliance by anglers, and lead poisoning caused by lead from other sources such as ammunition used in shooting (Newth *et al.* 2013).

Putting comprehensive legal restrictions on the use of toxic substances, to prevent their release into the environment, can provide an effective conservation mechanism for reducing negative effects of human activities on wildlife populations. At a time when many policy makers prefer to rely on voluntary actions or market forces to achieve change, our findings highlight that legal regulations on human activities can offer an effective way of alleviating human impacts on wildlife.

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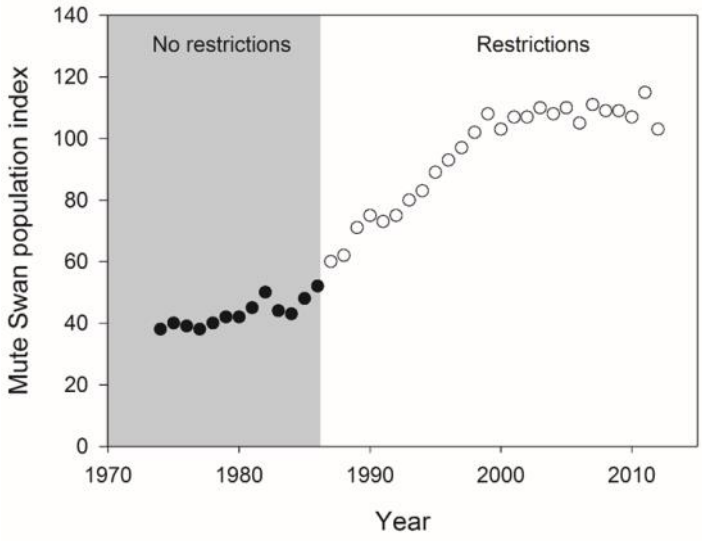


Figure 2: The trend in Mute Swan numbers in Great Britain, which rose sharply following the regulation of lead angling weights.

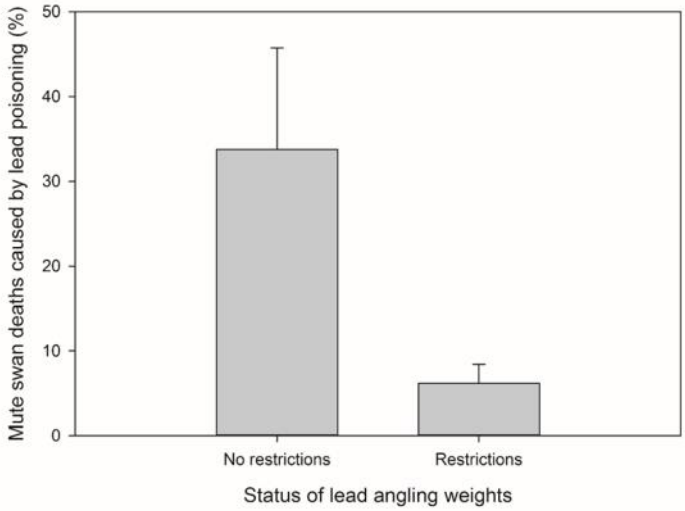
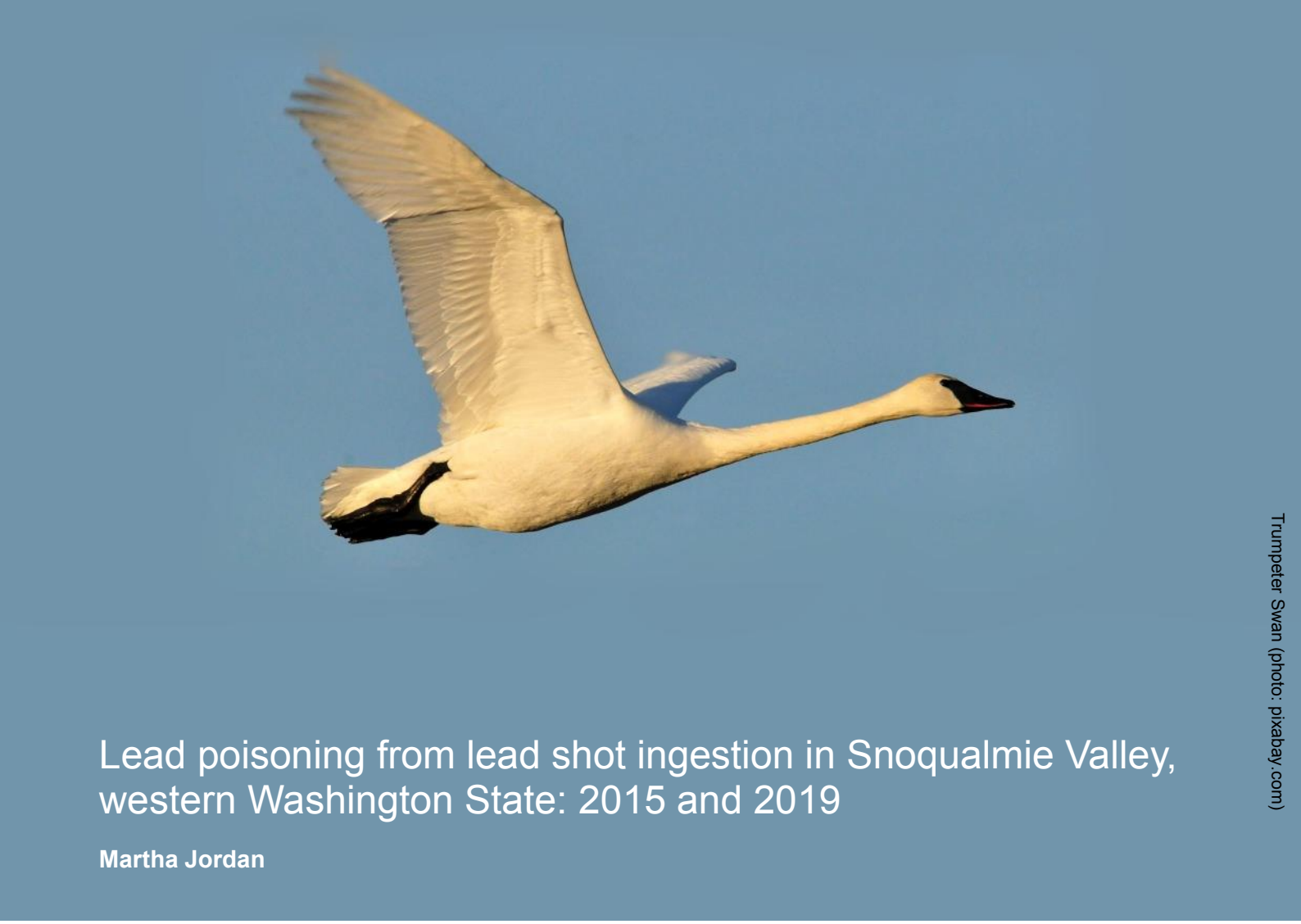


Figure 3: Following the regulation of lead fishing weights from January 1987 onward, post-mortem data showed a drop in the percentage of Mute Swans found to have died of lead poisoning.



Trumpeter Swan (photo: pixabay.com)

Lead poisoning from lead shot ingestion in Snoqualmie Valley, western Washington State: 2015 and 2019

Martha Jordan

Winters in western Washing State bring thousands of both Trumpeter and Tundra Swans to our agricultural fields and wetlands. They begin to arrive in late October and peak in mid-December. Over the past 15 years about 300-600 Trumpeter Swans and a few Tundra Swans have wintered in the Snoqualmie Valley agricultural areas where they feed on post-harvest field corn, pasture grass, winter wheat sprouts and wetland vegetation. This valley is about 66km long, with the Snoqualmie River winding north up the centre. The swans roost in a few suitable nearby lakes and sloughs.

In 2015 a significant flood event from the Snoqualmie River swept through the valley from south to north. When the waters receded, it left many fields in the south end of the valley with temporary ponded water. Some of the Trumpeter Swans took advantage of this situation and fed in an area not normally visited by them in drier times. Within about two weeks we noticed that there were several sick or dead swans on a nearby night roost. After a concentrated pick-up effort, a total of 50 dead and moribund Trumpeters were collected. Lead poisoning from lead shot ingestion was determined to be the cause. The source of the lead shot has not been determined. The die-off was not repeated the next four years.

As is typical of our swans, they began to prepare for the long migration north to their Alaska nesting grounds the end of February or the beginning of March. We had an unusual weather event with more than a foot of snow on the ground almost the entire month of February. This delayed swan movements north by about two weeks. What we also know is that as the thaw began, fields had a lot of ponded water and swans were seen feeding in non-usual places.

While out on my regular swan survey route on March 17th 2019, I noted several sick and dead swans at the north end of the Snoqualmie Valley at Crescent Lake. Upon closer look I discovered many dead swans scattered along the entire shoreline of the lake. Another die-off was happening. Over the next 14 days we had 64 known mortalities. The bodies that were intact were sent for necropsy to confirm what we suspected: lead poisoning from lead shot ingestion had killed them. We are waiting for the test results to confirm our suspicions.

This die-off is similar to the one in 2015 but centred about 18-20 miles north in the same river valley. It

seems plausible that the source of lead shot may be the same as in 2015. The swans ingested the lead later in the season in 2019 and then because they were in migration mode started moving north when they got sick. We found sick/dead swans mostly at the north end of the valley although several were collected in the same zone as the 2015 die-off. Northwest Swan Conservation Association is working closely with the Washington Department of Fish and Wildlife to investigate where the swans may be getting the lead shot.

Figure 1. Martha Jordan pursuing a sick Trumpeter Swan. Unseen is Moss, an Irish Water Spaniel trained to chase and retrieve injured or sick swans (photo: Marc Hoffman).

Figure 2. Receiving the sick Trumpeter Swan from Moss (photo: Marc Hoffman).

Figure 3. Martha Jordan, with Trumpeter Swan awaiting medical attention.

Expedition reports

Bewick's Swans in Turkmenistan

Anna Belousova & Eldar Rustamov

A total of 322 Bewick's Swans and 11 Mute Swans were recorded between Essenguly and Chekishlar on 16 January 2019, during an expedition to count waterbirds in the southwestern part of Turkmenistan (Table 1).

Observations were made on driving along the Caspian Sea coast from the Iranian border to 38.39535°N, 54.113725°E, and it was magnificent to see Bewick's Swans (including some flocks of tens of birds) in places where they have not been found for 20 years. Several pairs were accompanied by cygnets with dark juvenile plumage (Figure 1a, b); we counted more than 20 cygnets, including three pairs with three cygnets and one with four cygnets. An adult swan with a metal ring on its left leg was also sighted, but was too far away to be identified. The expedition was undertaken with Finnish colleagues – Toni Eskelin and Samuli Lehikoinen – and we are grateful to the Khazar zapovednik (nature reserve) for the help which they kindly provided during the study.

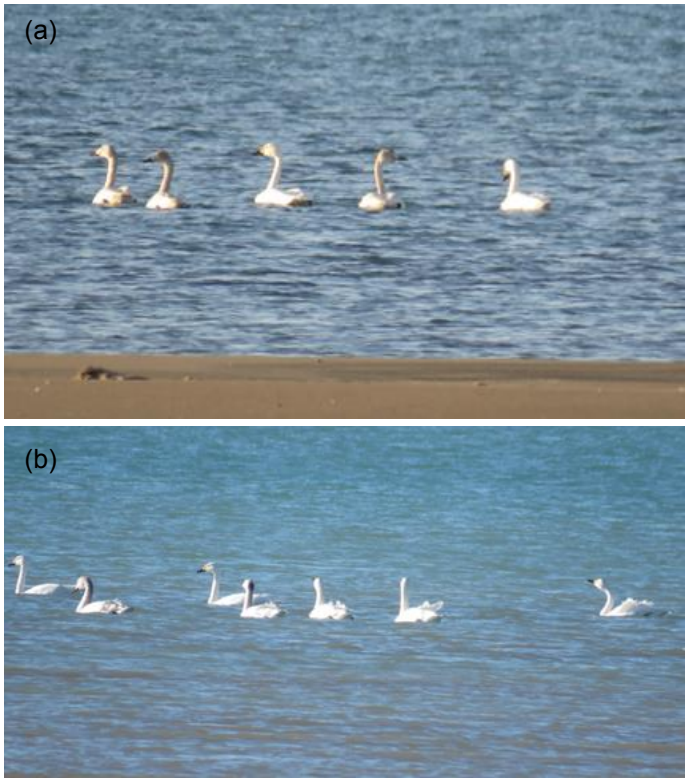


Figure 1. Bewick's Swans with cygnets on the Caspian Sea, Turkmenistan, on 16 January 2019 (photos: Anna Belousova).

Table 1. Summary of swans counted on 16 January 2019 on driving from the Iranian/Turkmenistan border to 38.39535°N, 54.113725°E.

Flock number	No. Bewick's Swans	No. Mute Swans	Location (when coordinates recorded)
1	167	5	
2	2		
3	3		38.02703°N,53.49689°E
4	4		
5	2		
6	48		
7	9	4	
8	30	2	
9	57		
Total	**322**	**11**	

Papers

Are swans crashing into airplanes?

Ming Ma

Figure 1. There are tens of thousands of Whooper Swans wintering in China (photo: Ma Ming).

Stories that have been told for decades can end up as “common knowledge”, even appearing in textbooks. They become ubiquitous folklore. No one doubts, no one questions. It's such a simple thing, but it's a falsehood that can't stand careful scrutiny. And yet it spreads all over the world.

Over the last ten years, a substantial volume of GPS tracking data has shown that the Whooper Swans *Cygnus cygnus* and Mute Swans *Cygnus olor* do not fly over the Himalayan Mountains, at an altitude of more than 8,848 meters. This is evident in that, firstly, there is no such migration route for the species. Also, secondly, we know that very few swans go to the Indian subcontinent to winter (Ali & Ripley 1980). Yet many stories and incorrect inferences, derived from the erroneous belief that they do, are common in China, and this affects swan management in the country.

Over the Himalayas, swans become the culprit

On the morning of May 14, 2018, the right windshield of the cockpit of Sichuan Airlines Flight 3U8633 from Chongqing to Lhasa broke and fell off during the flight, and the crew made an emergency landing at Chengdu Shuangliu Airport. According to various Chinese media reports on May 15, the reason why the aircraft windshield ruptured was from a “bird impact” and went on to assume that: "*At nearly 10,000 meters high, only swans can collide*." This is clearly a mistaken assumption. We do not rule out bird strikes, and some geese are known to fly at high altitudes through the Himalayas, but there is no particular reason to suspect that "only swans" can collide with aircraft at this elevation. I don't know why some Chinese people seem to have a prejudice against swans; they don't respect this beautiful bird in their thoughts or deeds (Ma Ming *et al*. 2012; Liu & Ma Ming 2017; Liu *et al*. 2019).

Migration behaviour and routes

We know that Whooper and Mute Swans, weighing 10-14kg, are the largest birds in China. The body is large and clumsy, their flight is difficult, and their endurance is relatively poor. Usually the flying height is below 400m. Of course, when crossing the Tianshan Mountains, it can be up to 4,600m above sea level, but the relative height is generally maintained at about

Figure 2. A group of Whooper Swans are flying over mountains (photo: Ma Ming).

200m above ground level, which means that the height relative to the terrain remains very low. We observed the difficulty of swans taking off during the migration season at Bayinbulke "Swan Lake" (2,400m above sea level). In order to save energy, they avoided the disadvantages of flying in very low temperatures (dense air), lack of oxygen, against winds, *etc*. Swans flew along canyons, or low contour ground. Our satellite tracking data have shown that observations are correct for the migration to Tianshan (Ma *et al*. 1993). Moreover, after turning over the Tianshan Mountains, the tracked bird stayed in the Tarim River Basin for the winter, and did not move south to India.

Circulation of erroneous reports

A few decades ago, climbers claimed that they saw swans flying over Mount Everest (8,848m, 28°N), which is as unlikely as the reports from early American astronauts that they saw the Great Wall from space. This so-called "knowledge" is so attractive that it has been disseminated for generations without being questioned, yet it would be difficult for non-ornithologists climbing in the hypoxic environment to verify any such observation. It is too far-fetched. The story perhaps originates in a report by an airline pilot of Whoopers Swans flying at 8,200 meters off the Outer Hebrides in Scotland in December 1967 (Stewart 1978), but this has not been verified by more recent observations or tracking data, with Whoopers generally flying at low altitudes (Pennycuick *et al.* 1996; Griffin *et al.* 2011). (Incidentally, I found a similar tale in the "world's most" series, in which Egypt's "Nile Swan" is said to fly to 17,000 meters, and to hover in the sky. There is of course no such species in Egypt, and it is a nonsense that swans circle so high in the air.) In China, some textbooks including some ornithological works (Fu *et al.* 1987; Chang *et al.* 1992; Ma & Cai 1993/2000; Zheng 2012) are also spreading this kind of "knowledge", which is really difficult to correct.

Basic knowledge

With the rapid development of science and technology, all kinds of tracking techniques are in place, which provide accurate data. None have found that swans fly over the Himalayas. Perhaps there is no such migration route at all, particularly given that few swans go to the Indian subcontinent (south of the Himalayas) to winter (Ali & Ripley 1980). In Asia, the three species of overwintering swans usually occur between the Yellow River Basin and the Yangtze River Basin, in areas such as Sanmenxia in Henan Province, Rongcheng in Shandong Province (35°N~38°N) (Whooper Swan), Poyang Lake in Jiangxi Province, Chongming Island in Shanghai (31.5°N) (Bewick's Swan Cygnus *columbianus bewickii*) and the Yili Valley in Xinjiang (42°N) (Mute Swan). There is a large population of Whooper Swans overwintering in Qinghai Lake (37°N), and the overwintering population in Central Asia stops south of Tianshan Mountains (38° N), usually no longer flying further south. With global climate change, the wintering areas of these three swan species will move more and more northward, and the possibility of crossing the Qinghai-Tibet Plateau to India is almost non-existent.

Swans should not be assumed to be the culprit

Careful reasoning should dispel such cases of pseudoscience by questioning this unproven ideas. At 10,000 meters, the temperature is below -60 C, the air is too thin to breathe (<30% oxygen). It is almost a forbidden zone for life. A big, clumsy bird like a swan

keeps flapping its wings and is tired. How can it survive? We know there are birds that can fly over the Himalayas, such as Ruddy Shelducks *Tadorna ferruginea*, Bar-headed Geese *Anser indicus*, Demoiselle Cranes *Grus virgo*, Black-necked Cranes *Grus nigricollis*, Saker Falcons *Falco cherrug*, Himalayan Griffon Vultures *Gyps himalayensis*, Upland Buzzards *Buteo hemilasius*, Pallas's Gulls *Larus icthyaetus*, Brown-headed Gulls *Chroicocephalus brunnicephalus* and so on. There is in fact a case of bird collision at high altitude. On November 29, 1973, a vulture collided with a commercial aircraft at an altitude of 11,280 meters (Laybourne 1974; Ma *et al*. 2017). Thus there are some examples to cite, but we must not always talk about swans being responsible. Swans should not "carry the black pot". We do not deny that the Sichuan Airlines 3U8633 accident, a life and death situation, was most likely the cause of a large bird strike. In the absence of any signs or evidence, one of the four possibilities and the most likely is a bird strike. However, what bird, and whether it was a vulture, goose, duck, crane, *etc*., is impossible to determine. But it's not likely a swan. The probability is almost zero.

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Figure 3. This is a wintering area of Whooper Swan in the Yellow River Basin near 35°N (photo: Ma Ming).

No food shortages for Bewick's Swans in Britain

Kevin A. Wood, Julia L. Newth, Kane Brides, Geoff M. Hilton & Eileen C. Rees

Winter numbers of the northwest European population of the Bewick's Swan *Cygnus columbianus bewickii* declined by almost 40% between 1995 and 2010 (Nagy *et al.* 2012). This substantial, long-term decline led to the population being classified as "Endangered" on the European Red List of Birds (BirdLife International 2015). An international species action plan was developed for the population and was adopted by the African-Eurasian Waterbird Agreement (AEWA) in 2012, to determine the causes and potential solutions of the decline (Nagy *et al.* 2012). One line of enquiry that his action plan calls for is to assess whether suboptimal feeding conditions at wintering sites could be influencing demographic rates and thus contributing to the decline (Nagy *et al.* 2012). We were particularly interested in answering whether recent declines in Bewick's Swan survival rates (Wood *et al.* 2018a) could reflect food shortages on the winter grounds.

WWT has led two recent studies that investigated whether the decline in Bewick's Swan numbers were linked to changes in the food resources available at key winter sites in Britain. In our first study, we focused on the swans' use of the agricultural land around the Ouse Washes in eastern England, the major overwintering site in Britain (Wood *et al.* in press). Here, the birds feed on winter crops including cereals and oilseed rape, as well as the post-harvest remains of sugar beet, potatoes, and maize. We found that the relatively small changes over time in the extent of each key crop in the landscape around the Ouse Washes were not related to the changes in the peak annual swan counts recorded between the 1950s and 2010s. Interestingly, the swans did not show increased or decreased use of any particular crop type. Moreover, there was no clear trend in the Bewick's Swans' body condition (a measure of their energy reserves) over time, and the swans are still able to regain and maintain condition after arriving from their long autumn migration before embarking on the their north-eastwards migration in the spring. Finally, swans in current winters do not spend more time feeding or alert, or less time resting compared with the 1970s (when the population was stable or increasing). Our research was published recently in BirdLife International's journal Bird Conservation International (Wood *et al.* in press).

In our second study, published in the European Journal of Wildlife Research, we tested whether swan body condition had varied in line with the trend in population size. We used long-term data from the four WWT sites used by Bewick's Swans since the 1960s:

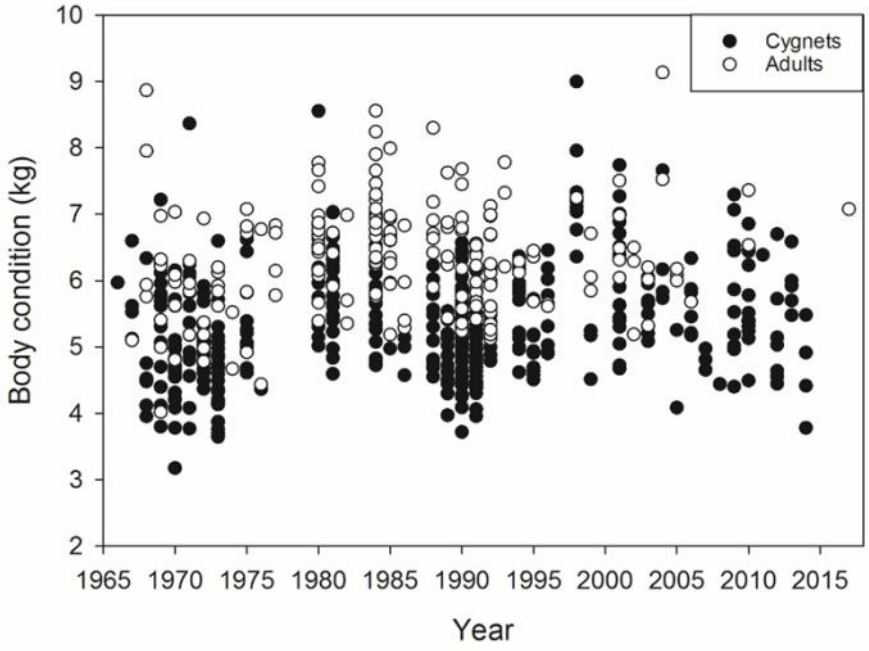

Figure 1: Individual body condition for Bewick's Swan adults and cygnets captured on the winter grounds in Britain between winters 1966/1967 and 2017/2018.

Bewick's and Whooper Swans feeding at the Ouse Washes (photo: Otto de Vries).

Caerlaverock in SW Scotland, Martin Mere in NW England, the Ouse Washes in eastern England, and Slimbridge in SW England. Parents and siblings were known for all individuals, allowing us to account for shared genetic factors and rearing environment in our analysis, as these could have confounded our ability to detect any temporal trend. As expected, adults had higher body condition than cygnets (Figure 1), but there were no consistent differences between sexes or wintering sites. Crucially, we found no evidence that the body condition of either adults or cygnets had changed over time, suggesting that the food supplies available at these key winter sites were adequate (Wood *et al.* 2018b).

Taken together, our research to date shows that enough food is available to swans on their winter grounds in Britain to allow them to survive the winter and to depart for their Arctic breeding grounds in good condition. Similarly, Tijsen & Koffijberg (2015) found no evidence that declining Bewick's Swan numbers at a key overwintering site in the Netherlands were related to changes in food supplies. Hence, food shortages are unlikely to have caused the observed declines in Bewick's Swan numbers in many winter range countries, including Britain. In our future research, we will be using simulation models to understand how future changes in food resources might affect overwintering swans, to help ensure that there will still be enough food for the birds in the years ahead. We look forward to presenting our findings in future issues of the Swan Specialist Group Newsletter.

For pdf copies of our recent papers please email the lead author (**kevin.wood@wwt.org.uk**)

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News items

North American Waterfowl Management Plan updated

The North American Waterfowl Management Plan (Plan) began in 1986. The Plan is built around international collaboration by federal, state, provincial, and non-governmental organizations in Canada, the United States, and Mexico who work toward common goals and objectives. This Plan is focused on waterfowl, their habitats, and the people who use and value them.

The Plan has involved a cycle of reviews and updates in response to science and conservation experiences. Previous updates expanded the scope and habitat objectives of the original Plan with (1) the inclusion of Mexico in 1994, (2) broadening the vision to recognize ancillary conservation benefits in 1998, and (3) focussing on strengthening the biological foundation of the Plan in 2004. In 2012, a major re-visioning of NAWMP was completed, the first since 1986, based on input and consultations within the waterfowl management community.

The 2018 Update (released September 2018 at Association of Fish and Wildlife Agencies) advances the previous Updates and records achievements the waterfowl management community has made toward the goals, objectives and recommendations of the 2012 Revision.

The 2018 Update includes: (1) an assessment of waterfowl management institutions measuring progress on each of the seven 2012 Recommendations; (2) a survey of waterfowl and wetland professionals; (3) input from the Future of Waterfowl Workshop held in September 2017; and (4) surveys of hunters, birdwatchers, and the general public in the U.S. and Canada.

North American Waterfowl Management Plan, www.nawmp.org.

Eight states sue over Migratory Bird Treaty Act memo

Eight US states: California, Illinois, Maryland, Massachusetts, New Jersey, New Mexico, New York, and Oregon, filed a suit on 5 September 2018 against the U.S. Interior Department, asking the court to vacate last year's opinion from Interior's Office of Solicitor regarding the Migratory Bird Treaty Act (MBTA). (See Mitchell, C.D. & Rees, E.C. (eds). 2018 *Swan News* issue no 14 / August 2018. Newsletter of the Wetlands International / IUCN SSC Swan Specialist Group. 40pp.)

The Migratory Bird Treaty Act was passed in 1918 and has been amended several times. It protects migratory birds and makes it illegal to take, possess, import, export, transport, sell, purchase, barter or offer for sale, purchase or barter, any migratory bird (or part of one), or a migratory bird nest or egg, without a valid permit. "Take" is defined by the USFWS as to "pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect".

The Wildlife Society, http://wildlife.org

Canada proposes migratory bird regulation updates

Environment and Climate Change Canada recently released proposed changes to its migratory bird regulations.

Canada's migratory bird regulations, adopted in 1917, have been amended several times to make changes or address specific issues. However, until now they had not been comprehensively reviewed. A current modernization effort now aims to ensure that the regulations are clear and meet current legal standards.

The proposed changes were released 1 June for public comment. Significant issues include recognizing aboriginal rights to harvest migratory birds and their eggs and ensuring that the regulations dealing with migratory bird hunting management and nest protection are consistent with current departmental policy.

Environment and Climate Change Canada will accept comments on the proposed changes until July 31 2019. Finalized regulations will be published in spring 2020 and be implemented for the fall 2020 hunting season.

The Wildlife Society, http://wildlife.org

Proceedings of the 6th International Swan Symposium

Proceedings of the 6th International Swan Symposium, held at the Estonian University of Life Sciences in Tartu, Estonia, in October 2018, have been published as a special issue of *Wildfowl* (as *Wildfowl* Special Issue No. 5). The proceedings includes papers on the coordinated international censuses undertaken for Europe's migratory swans since the late 20th century, with results describe long-term trends in numbers and distribution for the NW European Bewick's Swan and the NW Mainland European Whooper Swan populations. These are very timely, ahead of the next international censuses scheduled for January 2020.

Two review papers are published in this issue of the journal, with the first considering current trends and future directions in swan research and the second assessing the conservation status of the world's swan populations. Additionally, there are valuable contributions on studies on swans staging in the Russian part of the Gulf of Finland (near St Petersburg), on the breeding propensity for Bewick's Swans nesting in Chukotka (far eastern Russia), and on Whooper Swan moult migrations. Recent changes in site use by Bewick's Swans in Schleswig Holstein (Germany) are described, providing important information on which was traditionally a spring staging area but where more birds are now occurring in mid-winter, are described. From North America we learn about density dependence in productivity for non-native Mute Swans in Michigan. Back in Europe, detailed findings of a long-term (30-year) study of Mute Swans ringed in Riga, Latvia, are published for the first time.

The full list of papers, and also a pdf for each paper, are available online via the journal's website at **https://wildfowl.wwt.org.uk/index.php/wildfowl/issue/view/297**.

For additional news, please see the Swan Specialist Group webpage at **http://www.swansg.org/news-and-events/.**

In the press

Dead Trumpeter Swans in Minnesota had toxic lead levels

⇒ https://www.bluestemprairie.com/bluestemprairie/2019/03/mn-swans-died-of-lead-poisoning-likely-from-anglers-sinkers-use-nontoxic-alternatives.html

⇒ https://www.twincities.com/2019/03/30/dead-trumpeter-swans-in-vadnais-heights-had-toxic-lead-levels-the-u-of-m-reports

⇒ https://www.heraldnet.com/news/lead-poisoning-suspected-in-local-trumpeter-swan-deaths

Lead shot possibly to blame for deaths of nearly 60 swans

⇒ https://komonews.com/news/local/more-than-50-trumpeter-swans-found-dead-near-monroe

The comeback of Trumpeter Swans

⇒ https://www.nytimes.com/2019/04/09/science/trumpeter-swans-ontario-canada.html

Black swans frustrate a raven attacking their cygnets

⇒ https://www.newsflare.com/video/235481/animals/courageous-black-swans-frustrate-a-raven-attacking-their-cygnets

Cover photo for *Wildfowl* Special Issue No. 5: Mute Swan *Cygnus olor* group on Veluwemeer, the Netherlands, in winter. © Jan Vermeer/Minden Pictures/FLPA.

In memoriam

Sjoerd Dirksen, 1959 – 2018

Wim Tijsen

The Swan Specialist Group as greatly saddened to hear that the highly respected Dutch ecologist and ornithologist Sjoerd Dirksen died suddenly at the age of 59 whilst attending the International Ornithological Conference in Vancouver in September 2018. Sjoerd was always full of energy and ideas, so his passing came as an incredible shock to his family and his many friends in the ornithological community.

Among his many interests, Sjoerd ran a long-term study on the decline of the Red-crested Pochard *Netta rufina* population and a few years ago started a project to study the rapid increase of moulting Ruddy Shelducks *Tadorna ferruginea* in the Netherlands. In addition to his work on ducks and shelducks, Sjoerd was also enthusiastically involved in swan research, and was one of the pioneers of the Dutch Bewick's Swan Study during the 1980s. With Jan Beekman and Teus Slagboom he instigated the international Bewick's Swan censuses, resulting in several papers on swans being published in *Wildfowl* and also in the Proceedings of the 3rd International Swan Symposium held in Oxford, UK, in 1989.

More recently he was involved in the collision risk posed by wind farms to swans and other waterbirds, when working as a leading environmental consultant at Bureau Waardenburg. There he inspired many young researchers, and advocated the development and use of scientific research in order to provide the reliable advice needed to inform sound conservation and management programmes. After leaving this company in 2014, he run his own consultancy Sjoerd Dirksen Ecology to have more "study-time" to concentrate on projects with his beloved waterfowl and to explore his administrative qualities as Chairman of Ringersvereniging, the Dutch Ringers Association. Work and leisure were often mixed up, because of his never ending enthusiasm for the natural world. He was always cooperative and generous in giving his time to others (including Birdlife Netherlands; Vogelbescherming Nederland), because he was always a conservationist at heart.

Sjoerd Dirksen investigating wetland habitat (photo: Hella Smit).

With Sjoerd's passing we have lost a great ornithologist, a critical thinker and above all a kind and thoughtful person with a keen interest in waterbird ecology. It was always good to see him at the various meetings and conferences where our paths crossed, and to know that he was there for helpful advice and information. Our condolences go to his wife Hella Smit and their family; he will be sorely missed.

Bewick's Swans (photo: James Lees / WWT).

Rodney Jacob King, 1945 – 2018

Carrol Henderson

Rodney Jacob King passed away on 24th December 2018, at the age of 73 years.

Born in Rexburg, Idaho, in 1945, Rod earned his Bachelor of Science in wildlife management from Utah State University in 1967. In 1976, he moved to Alaska, where he worked as a wildlife biologist for the U.S. Forest Service. In 1978, he joined the Waterfowl Management Program of the U.S. Fish and Wildlife Service in Anchorage, then moved to Fairbanks in 1981 and opened the first migratory bird/waterfowl management field station. He lived in Fairbanks until 2000, when he moved to the San Francisco Bay area to fly waterfowl surveys that took him into Canada, along the west coast and into northern Mexico, still following the migratory waterfowl. He retired in 2007.

Rod's career of 40-plus years was mainly dedicated to waterfowl management and biology, and included his special commitment to the protection and restoration of Trumpeter Swans. Rod mastered the art of flying, primarily as a means for accomplishing much of his work with waterfowl and other wildlife. His exemplary skill level at flying was such that few could match it in the wildlife field and even in general bush flying, as well. Many biologists and others not only welcomed the opportunity to fly with Rod in accomplishing their missions, but also sought him out to fly with him - one of the highest compliments that a natural resource pilot can receive.

My personal memories are of first meeting Rod King in June 1986, when I arrived in Fairbanks, Alaska, to collect Trumpeter Swan eggs that would be transported back to Minnesota for hatching, rearing, and eventual release on the lakes of northern Minnesota. It was the first of three such egg collection trips to Alaska in 1986, 1987, and 1988, and the beginning of the most exciting and rewarding wildlife conservation project of my 45-year career with the Minnesota DNR.

Rod was host for me and for my DNR volunteer Dave Ahlgren, an officer in the Minnesota Air National Guard and a pilot for Northwest Airlines. Rod's easy-going manner and friendly personality I later realized understated the incredible knowledge and skills he possessed as a U.S. Fish and Wildlife Service pilot-biologist. Rod had spent two years preparing for this moment by locating Trumpeter Swan nests in the lakes and wetlands of the 500,000 acre Minto Flats about 35 miles west of Fairbanks. He identified which lakes were large enough to accommodate take-offs and landings with his float plane during egg collection visits.

He also designed a scientific approach for assessing the potential impact of removing 50 Trumpeter Swan eggs per year for three years to see if it would be detrimental to the long term welfare of the local trumpeter swan population. He would calculate the productivity of nests where eggs were taken (leaving two live eggs in each nest) and nests where eggs were not collected.

While this was a collaborative multi-year effort involving many agencies, organizations, and individuals, Rod was the key to our success. He identified the location of the nests where eggs were to be collected, he provided float plane access for collection of the eggs, and kept us on schedule to collect all 50 eggs in one long Alaskan day. And best of all, he approached all of this with such casual confidence that it belied the incredible skills he possessed to make it all happen. On June 9, 1986, Rod flew Dave and me out to their Game and Fish research log cabin on Minto Lake which became our headquarters during the egg collections.

Minnesota DNR wildlife specialist Steve Kittelson had developed four insulated egg transport suitcases that could each hold 12 Trumpeter Swan eggs. They were designed after suitcases used to transport whooping crane eggs from the Northwest Territories to the U.S. for hatching and release as part of USFWS Whooping Crane restoration efforts. However, each suitcase depended on the heat from four old-fashioned rubber hot water bottles that had to be refilled with hot water every couple hours. Dave was to become our "incubation specialist" who would later stay at the cabin

Rod King at a Trumpeter Swan nest with eight eggs, 1988. (photo: Carrol L. Henderson).

and boil water for the hot water bottles while Rod and I went out with a smaller 12-egg suitcase for collecting the eggs.

We timed our egg collection visits so that the eggs would be about two-thirds through their 32-37 day incubation period. That would make them more capable of surviving minor changes in temperature during our collection process and flight back to Minnesota.

Rod's flights over the Minto Flats provided an extraordinary vision of a vast wetland wilderness—a window on nature highlighted by sightings of Moose and their calves, Black Bears, and Bald Eagles. Once Rod sighted a Black Bear eating a long dead and quite rotten dead Moose on the shoreline. He circled so we could get a closer look. As we flew over the bear, it threw its body onto the Moose and looked up at us, as if to declare that it was not willing to share with us. Another time when we were landing, a moose cow and its calf were feeding in chest-deep water near shore and we were gliding by when the calf raised its head out of the water. The calf was so surprised that it reared on its hind legs and fell over backwards. And then there were the many Trumpeter Swan pairs at their nests. They glistened like pearls highlighting the waters of the Minto Flats.

On each lake Rod would taxi as close to the nest as possible. I would then get out wearing my chest waders and wade or walk to the nest for collecting the eggs. Several times I broke through the bog mat and sunk to the top of my waders before I could crawl out onto the bog mat. I discovered that Minto Flats water in June is REALLY cold.

Usually the swans would leave their nest and swim nearby as we collected the eggs. Except once. At one nest, the defensive cob swan stood its ground over the nest as I approached. When I was within 25 to 30 feet it charged me—running across the water, honking, and flapping its wings. I froze, focusing my camera and snapping photos as it became a big white blob in my viewfinder. It dropped into the water and glided past my side as it reached me. As you might imagine, the photos were quite blurred!

I had flown with Minnesota DNR conservation officer pilots on many occasions for wildlife surveys and aerial photography, but this was my first experience taking off and landing in a float plane. We visited about two dozen lakes each year, so I got lots of experience taking off and landing on those beautiful northern lakes. I recall Rod's plane was a Cessna 206 in 1987, but I don't recall if it was the same plane all three years of egg collections. Whatever the plane, Rod was a master, also with a sense of humour. His take-offs and landings put one at ease. Except once. On one small lake we landed and taxied to the trumpeter swan nest. We collected the eggs, packed them in our egg suitcase, and prepared to take off. However, Rod said there was a problem. The wind had died while we collected the eggs. On a small lake, it is easier for a plane to take off into the wind, and a little "chop" is needed for a float plane to break the surface tension that exists between the flat bottom of the floats and the surface of the water so the plane can lift off. Our "chop" was gone!

Rod taxied to one side of the lake, got out, and pushed the plane backwards to the shore so it could begin taking off with the maximum take-off distance before reaching the opposite shore. He took off across the lake but failed to break the bond between the floats and the water's surface. He shut down the engine part-way across the lake, and we "thunked" against the opposite shore. Rod got out, turned the plane around, and he tried to take off again. Same result. As we "thunked" against the opposite shore, he turned to Dave and me and said "I'm sorry, but one of you will have to go."

He explained that on a small lake like this, it is a "three-person lake" for a float plane if there is a wind

for take-off and a chop on the water. It becomes a “two -person lake” if there is no wind. Through some kind of selection process I still do not understand, I was the “third man out.”

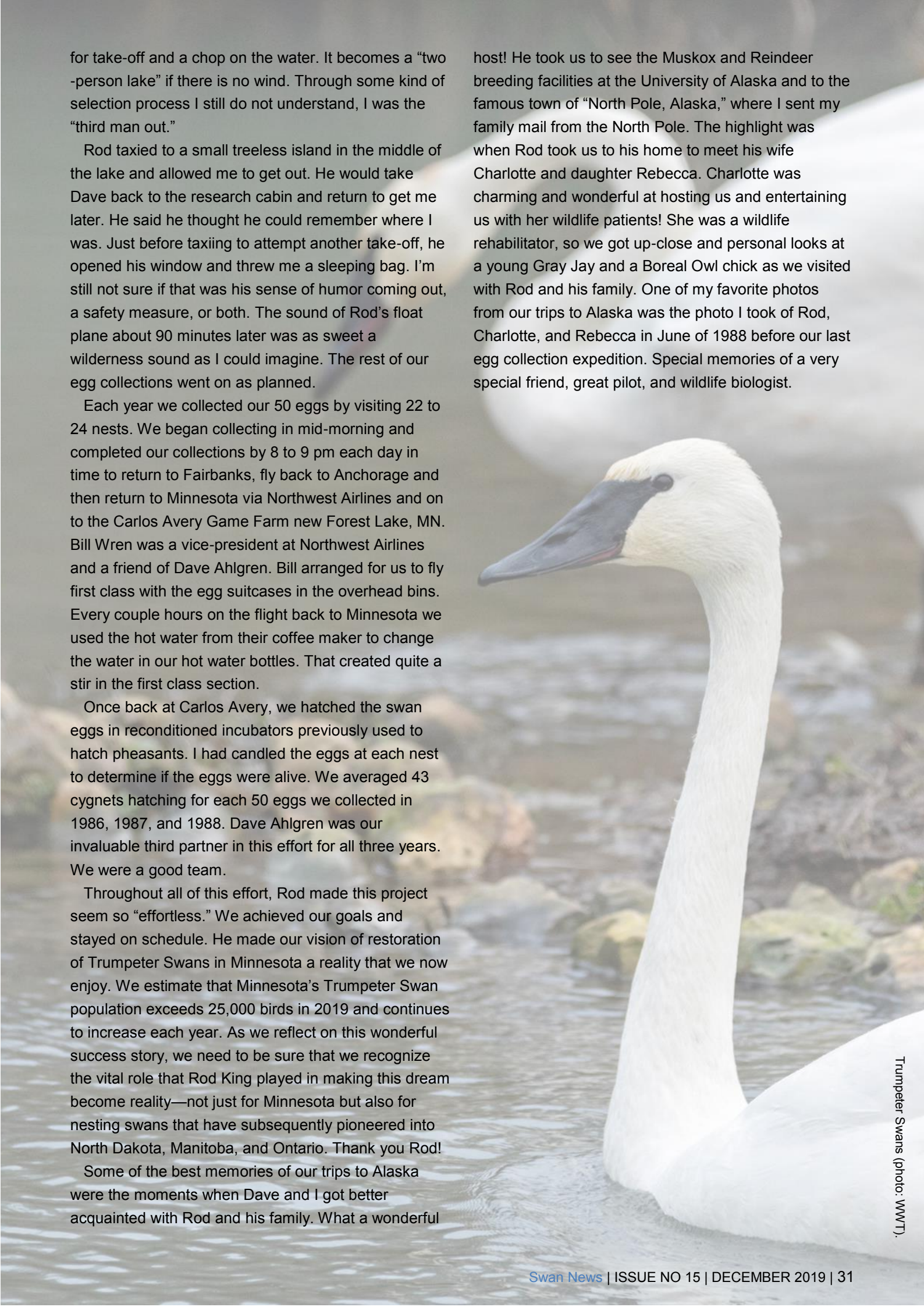
Rod taxied to a small treeless island in the middle of the lake and allowed me to get out. He would take Dave back to the research cabin and return to get me later. He said he thought he could remember where I was. Just before taxiing to attempt another take-off, he opened his window and threw me a sleeping bag. I’m still not sure if that was his sense of humor coming out, a safety measure, or both. The sound of Rod’s float plane about 90 minutes later was as sweet a wilderness sound as I could imagine. The rest of our egg collections went on as planned.

Each year we collected our 50 eggs by visiting 22 to 24 nests. We began collecting in mid-morning and completed our collections by 8 to 9 pm each day in time to return to Fairbanks, fly back to Anchorage and then return to Minnesota via Northwest Airlines and on to the Carlos Avery Game Farm new Forest Lake, MN. Bill Wren was a vice-president at Northwest Airlines and a friend of Dave Ahlgren. Bill arranged for us to fly first class with the egg suitcases in the overhead bins. Every couple hours on the flight back to Minnesota we used the hot water from their coffee maker to change the water in our hot water bottles. That created quite a stir in the first class section.

Once back at Carlos Avery, we hatched the swan eggs in reconditioned incubators previously used to hatch pheasants. I had candled the eggs at each nest to determine if the eggs were alive. We averaged 43 cygnets hatching for each 50 eggs we collected in 1986, 1987, and 1988. Dave Ahlgren was our invaluable third partner in this effort for all three years. We were a good team.

Throughout all of this effort, Rod made this project seem so “effortless.” We achieved our goals and stayed on schedule. He made our vision of restoration of Trumpeter Swans in Minnesota a reality that we now enjoy. We estimate that Minnesota’s Trumpeter Swan population exceeds 25,000 birds in 2019 and continues to increase each year. As we reflect on this wonderful success story, we need to be sure that we recognize the vital role that Rod King played in making this dream become reality—not just for Minnesota but also for nesting swans that have subsequently pioneered into North Dakota, Manitoba, and Ontario. Thank you Rod!

Some of the best memories of our trips to Alaska were the moments when Dave and I got better acquainted with Rod and his family. What a wonderful host! He took us to see the Muskox and Reindeer breeding facilities at the University of Alaska and to the famous town of “North Pole, Alaska,” where I sent my family mail from the North Pole. The highlight was when Rod took us to his home to meet his wife Charlotte and daughter Rebecca. Charlotte was charming and wonderful at hosting us and entertaining us with her wildlife patients! She was a wildlife rehabilitator, so we got up-close and personal looks at a young Gray Jay and a Boreal Owl chick as we visited with Rod and his family. One of my favorite photos from our trips to Alaska was the photo I took of Rod, Charlotte, and Rebecca in June of 1988 before our last egg collection expedition. Special memories of a very special friend, great pilot, and wildlife biologist.



Trumpeter Swans (photo: WWT).

Dr Aivar Leito, 1954 – 2018

Leho Luigujõe

Aivar Leito monitoring radio-telemetry signals of the Common Crane (photo: Estonian Ornithological Society website **https://www.looduskalender.ee/n/node/2819**).

During preparations for the 6th International Swan Symposium in Estonia in autumn 2018, the scientific committee was greatly buoyed by kind words and encouragement from fellow committee member, the eminent Estonian ornithologist Dr Aivar Leito. It therefore was with great sadness that we learned that Aivar passed away on September 21, just before the symposium in mid-October 2018, at the much too early age of 64 years.

Aivar Leito was renowned for his studies on the abundance and conservation status of birds and their habitats in Estonia and more widely. He had particular interest and expertise in the ecology of geese and cranes, but was by no means confined to these species. He was appointed Chair of Environmental Protection and Landscape Management at the Estonian University of Life Sciences, where he focused on the study of nesting and migration ecology of birds, and also served on the Board of the Estonian Ornithological Society of Estonia, including as Vice Chairman of its Council. He was also for many years on the editorial board of the Estonian Ornithological Society's journal "*Hirundo*" and in 2015 was elected honorary member of the Estonian Ornithological Society. The previous year, in 2014, he was awarded the Eerik Kumari Nature Conservation Award for his major contribution to the research and protection of birds in Estonia and beyond.

Aivar was one of the key players in the development of the Estonian national bird monitoring programme. He wrote numerous scientific articles and was the first to develop radio- and satellite-tracking studies of bird movements in Estonia, which has given ornithologists invaluable knowledge of their migration routes. His legacy will continue through the students that he inspired and the ongoing conservation of birds and their habitats in Estonia.

Common Cranes (photo: Joe Blossum)

Wes Halton, 1953 – 2019

Steve Christmas

Wesley James Halton was born in 1953 in Farnworth, Bolton and attended Farnworth Grammar School, where he became interested in natural history and photography. After several jobs in retail, he became a countryside warden with Bolton Council, based at Moses Gate CP, Farnworth, and began what was to be his main vocation. The job combined working with nature and with people, two of Wes's main passions. His role was varied, involving land management, working with schools and public engagement. Through work, he also developed an interest in canoeing and was instrumental in designing and constructing a canoe slalom course on the River Irwell.

I first met Wes by chance in 1982 when I noticed a small flock of mute swans at Moses Gate, where Wes was the warden on duty, and called in to ask permission to ring them. This began a long and fruitful collaboration which lasted until his death. Wes soon commenced training as a bird ringer, obtaining his 'C' permit a couple of years later. Ringing encompassed a range of activities, including reed bed and hirundine roost ringing, but Wes soon found his main interest in swan ringing. One of the first swans we ringed was the gargantuan breeding cob from Moses Gate, who saw off all competition for 20 years. After its death, Wes arranged for it to be stuffed and it made an impressive display in the office at Rock Hall where Wes lived and worked at the time.

In the early 1980's, Mute Swan populations in Greater Manchester were at a low ebb, with no more than 15 nesting pairs but, following the ban on lead fishing weights, numbers began to increase and we began ringing them in numbers from 1988. It was apparent that most of the ringing groups in the North-West did not prioritise swan ringing and after negotiating with them, the North West Swan Study Group (NWSSG) was established. This covered Cumbria, Lancashire, Merseyside, Greater Manchester and the Isle of Man and other interested ringers became involved, including Jack Sheldon (Cumbria) and Dave Sharpe (Lancaster/Isle of Man). Later, Charles Findlay (Fylde) joined the group and covered the area from Cumbria to the Fylde. Kane Brides, Kev Scott, Sean Gray and others became involved from the mid-2000s. During the period 1988 – 2019 over 7,000 mute swans were ringed in the region. Blue darvic rings were used from 1989, generating multiple sightings, and Wes designed and maintained a web site to allow members of the public to report sightings.

Wes Halton in Kearsley Park, February 1985.

Wes was the driving force behind the NWSSG from this time and rapidly became familiar with all of the canals and suitable lakes and ponds in the North-West. Through his job as a countryside warden, he already

Mute Swan (photo: Claire Spelling / WWT).

had many contacts and negotiated permissions for access to swan sites. He was most at home when explaining the aims of the study to interested members of the public. Wes drove large distances to catch and ring families of cygnets each autumn, often accompanied by his daughter Gail and Labrador Ben. At other times of the year, non-breeding and wintering flocks were targeted and Wes was involved in organising the inaugural catch of wild swans at Martin Mere in the early 1990s, as well as many of the subsequent winters' catches. He gave regular talks about the NWSSG to members of the public and to the Swan Study Group.

During this period, a vast amount of data on North-West mute swan populations and movements were generated but in view of Wes's premature death these have yet to be fully analysed. Wes began to suffer from ill health and took early retirement in his 50s. Although still actively coordinating the web site and reporting of swan sightings, he became less able to do field work from 2014. Wes's legacy will be the continuation of the study which he worked with such a passion to set up.

Mute Swan (photo: David Fyles / WWT)

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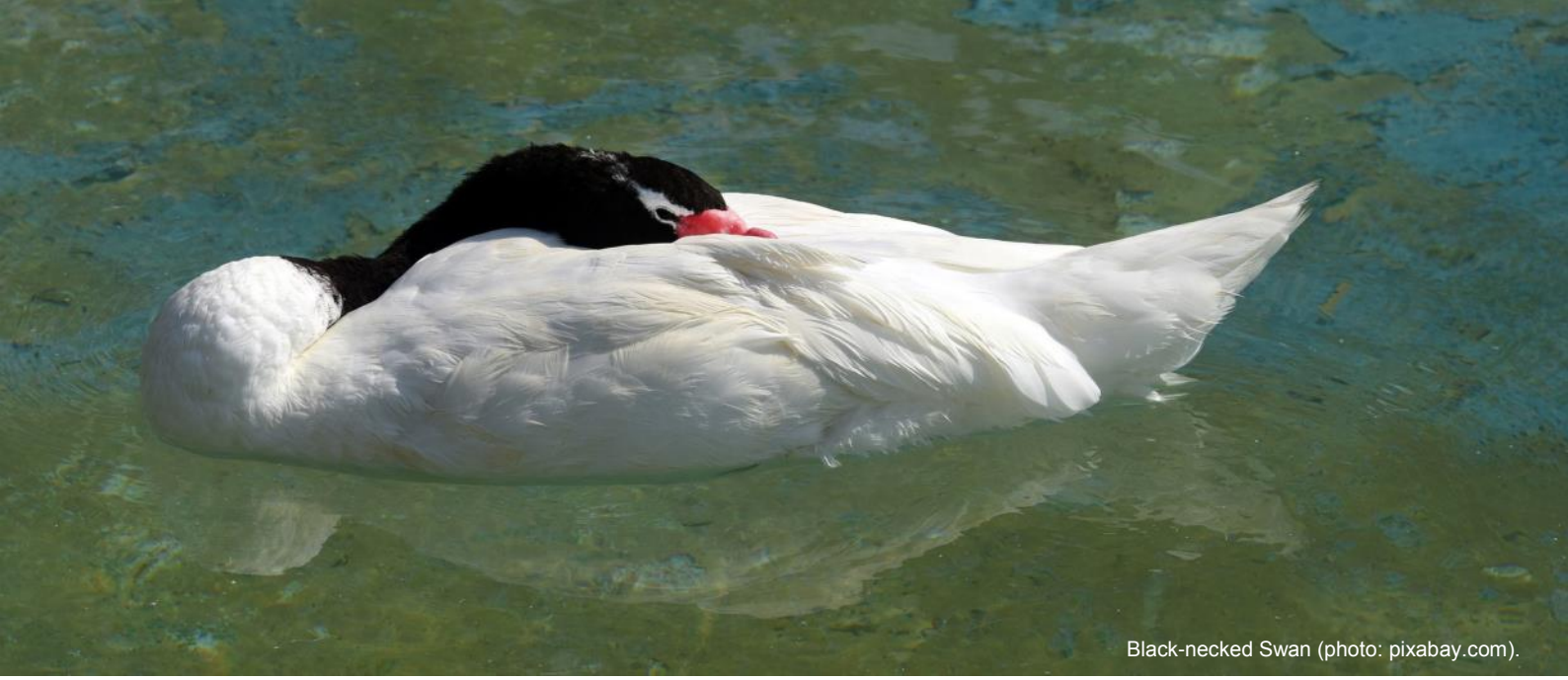

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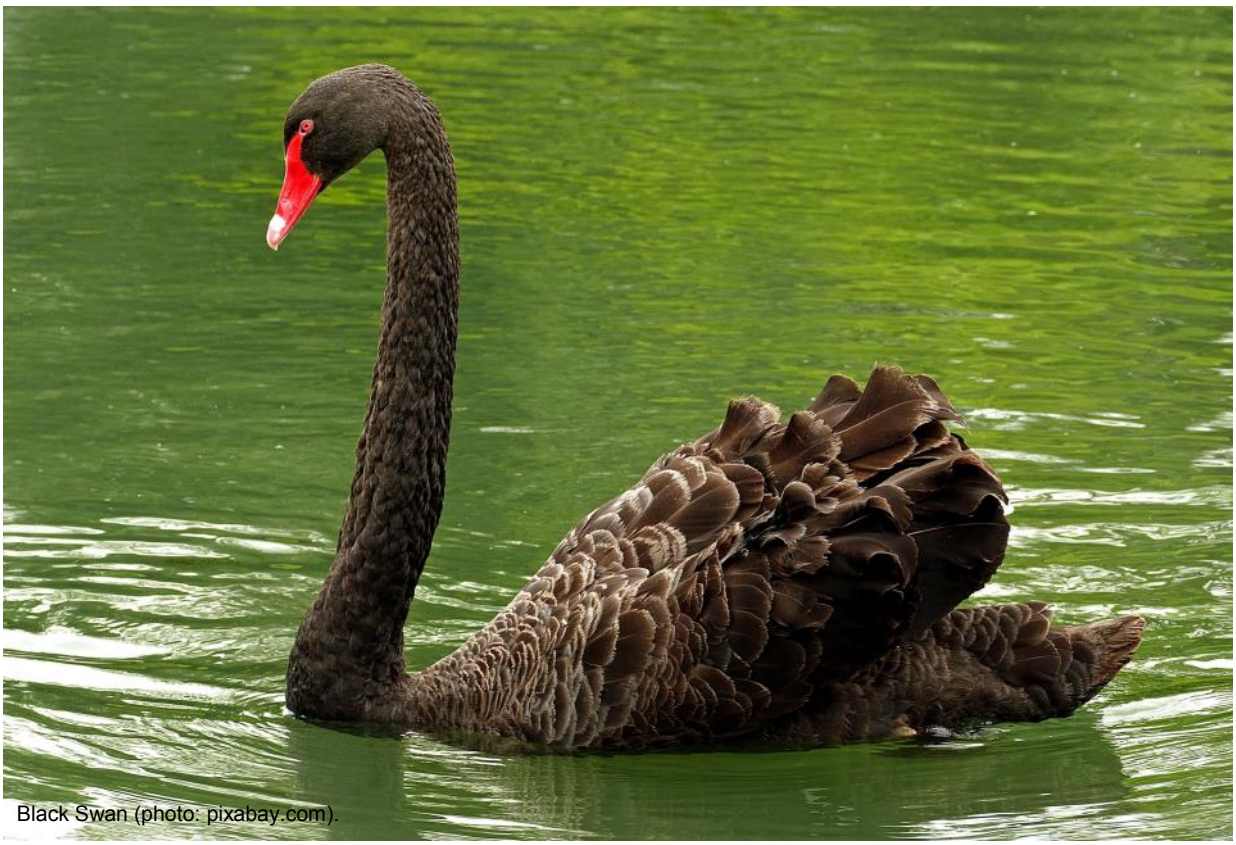

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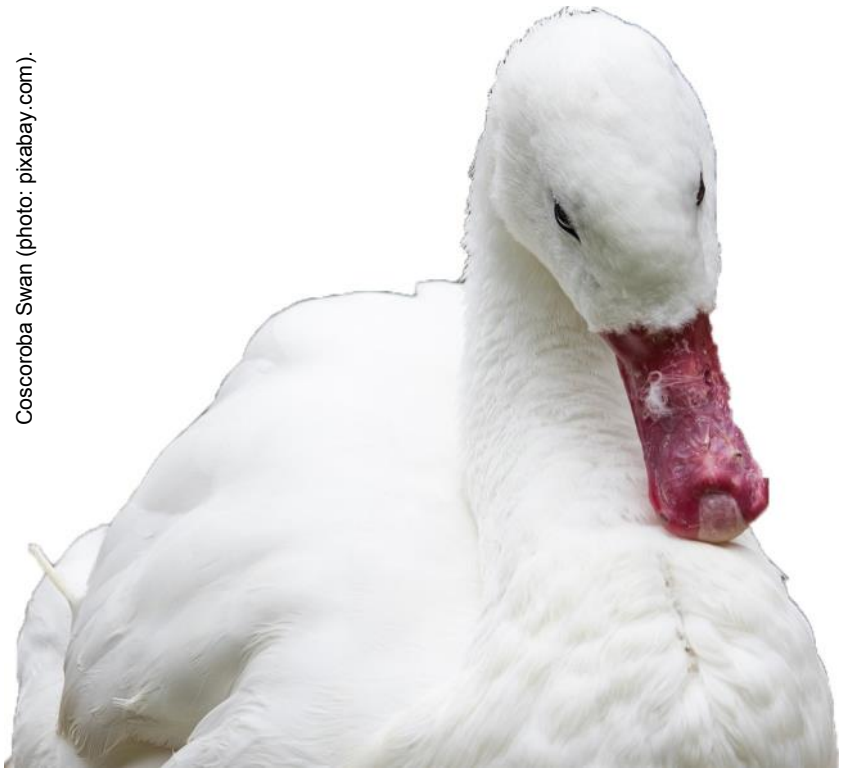

Coscoroba Swan (photo: pixabay.com).

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"To form a perfect conception of the beauty and elegance of these Swans, you must observe them when they are not aware of your proximity, and as they glide over the waters of some secluded inland pond. On such occasions, the neck, which at other times is held stiffly upright, moves in graceful curves, now bent forward, now inclined backwards over the body. Now with an extended scooping movement the head becomes immersed for a moment, and with a sudden effort a flood of water is thrown over the back and wings, when it is seen rolling off in sparkling globules, like so many large pearls. The bird then shakes its wings, beats the water, and as if giddy with delight shoots away, gliding over and beneath the surface of the liquid element with surprising agility and grace. Imagine, reader, that a flock of fifty Swans are thus sporting before you, as they have more than once been in my sight, and you will feel, as I have felt, more happy and void of care than I can describe."

John James Audubon
***Birds of America*, 1843**

SWAN SPECIALIST GROUP