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# GOOSE BULLETIN

## ISSUE 16 – MAY 2013

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**GOOSE BULLETIN** is the official bulletin of the Goose Specialist Group of Wetlands International and IUCN.

**GOOSE BULLETIN** appears as required, but at least once a year in electronic form. The bulletin aims to improve communication and exchange information amongst goose researchers throughout the world. It publishes contributions covering goose research and monitoring projects, project proposals, status and progress reports, information about new literature concerning geese, as well as regular reports and information from the Goose Database.

Contributions for the **GOOSE BULLETIN** are welcomed from all members of the Goose Specialist Group and should be sent as a Word-file to the Editor-in-chief. Authors of named contributions in the **GOOSE BULLETIN** are personally responsible for the contents of their contribution, which do not necessarily reflect the views of the Editorial Board or the Goose Specialist Group.

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## Editorial

With the number 9 issue from November 2009 the GOOSE BULLETIN was revived and in its first Editorial the Editorial Board wrote:

“Currently it is planned to publish the GOOSE BULLETIN in the form of at least one issue per year, but ..... if the editorial board should receive enough material to publish two Bulletins per year, we will try to do so. For this reason, it is not the editorial board that decide about the size and the number of issues per year, but YOU: the members of the Goose Specialist Group!”

During the last three and a half years and seven issues of the GOOSE BULLETIN, the editorial board did receive enough manuscripts to fill each issue. Sometimes we even had to shift manuscripts to the next issue, just to avoid creating PDF-files that are too large for most mailboxes.

However, in trying to produce issue 16 we really had a problem! Some manuscripts which were promised never came, others came with (great) delay.

In spite of these difficulties we hope that we have managed to produce again another interesting issue, although we could not keep to our original schedule and have delayed the release of this issue.

To avoid the same delay for the next issue, we would like to ask all potential authors to send us manuscripts. The editors see the GOOSE BULLETIN as a means of members communicating their news, reports and views, as well as informing everyone about what they are doing, announcing projects, initiatives and meetings. Furthermore, the editorial board is keen to take short scientific notes and articles that, whilst they might not be quite good enough for submission to major journals, may be of general interest to other group members.

So, if you have some interesting stuff for the Goose Bulletin send it as soon as possible to the editor-in-chief because .....

**the next issue of the GOOSE BULLETIN is planned to appear in November 2013, which means that material for this issue should have reached the editor-in-chief not later than the 31st of August 2013.....but earlier arrival is allowed!**

The Editorial Board



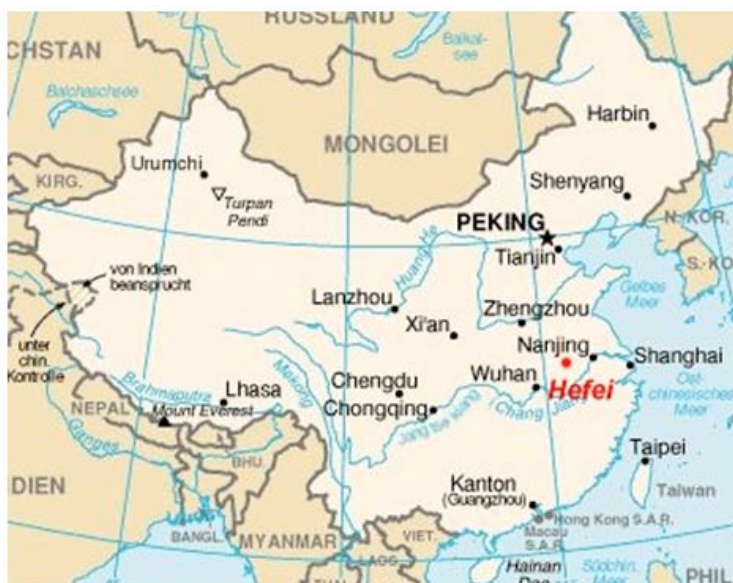
## **The 16th meeting of the Goose Specialist Group in China 2014. Change of the time schedule.**

Lei Cao

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As many of you will know the wetlands of the Yangtze River floodplain have been subject to dramatic changes in recent years. One of the consequences of these changes is that wintering waterbirds now seem to disperse from many of the wetlands earlier than in previous years. This has caused a number of problems, but one of them is that spectacular concentrations of waterbirds are becoming more difficult to witness late on in the winter.

For this reason, it is with considerable regret that we have decided that it is necessary to delay the 16th meeting of the Goose Specialist Group, hosted by the University of Science and Technology of China (USTC), until November 2014. This decision has not been taken lightly, but one of the objective has been to provide delegates with great opportunities for bird-watching activities during their stay as well as for learning about the latest progress of goose studies from all over the world.

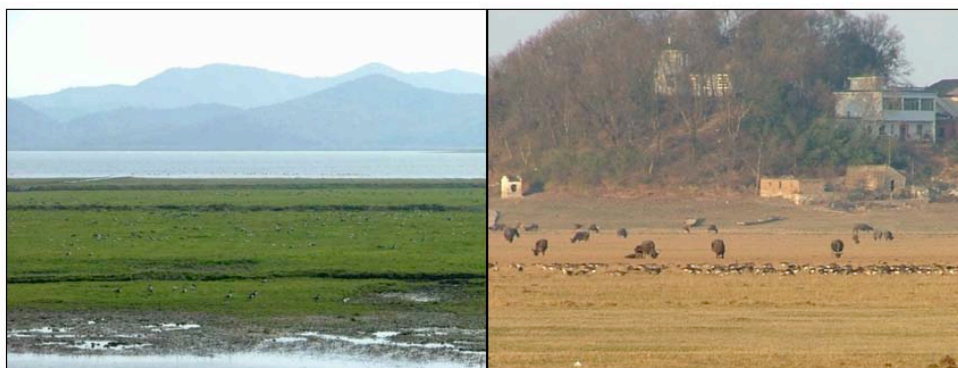


We apologise for this change of plan, and very much hope that the delay causes minimal problems to all of you intending to attend the meeting. However, we are concerned that conference delegates have the very best possible opportunities to experience Chinese wetlands and the birds that they support. Based on our experiences in the last two winters, we are convinced that this objective is best served by putting the conference back to November, when water levels are higher and birds more concentrated. We will bring you more details later in the year, but if anyone wants further details please contact Cao Lei at the e-mail address above.

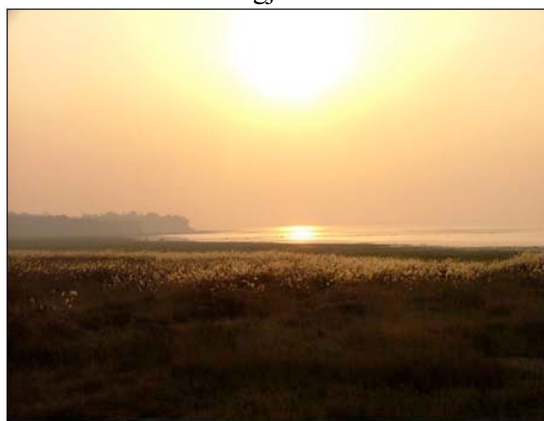
The meeting will consist of two and a half days of talks and posters, and a short visit to Shengjin Lake National Nature Reserve and/or Poyang Lake National Nature Reserve within the Yangtze River floodplain.



Over sixty waterbird species can be found on the reserves, including large numbers of Greater White-fronted Geese, Bean Geese, Falcated Ducks and Hooded Cranes at Shengjin Lake, c. 200 km south of USTC. The Shengjin Lake visit, which will take three hours by bus, is particularly suitable for participants who have limited time but hope to watch these beautiful birds in the Yangtze floodplain.



Shengjin Lake



Poyang Lake

Poyang Lake, c. 450 km south of USTC, is the largest fresh water lake in China and one of the most important wintering waterbirds sites. By taking a three-hour trip, participants will see many rare species such as Siberian Cranes, White-naped Cranes, Hooded Cranes, Swan Geese, Tundra Swans and Storks.



## Monitoring geese in Poland: the start of a new project

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It is now 15 years since the counts of migrating and wintering geese in Poland, organised from 1991 to 1997 by the Świdwie Ornithological Station, came to an end (STASZEWSKI & CZERASZKIEWICZ 2001). Since then, despite some goose monitoring carried out in a few Polish regions, no co-ordinated counts have been organised on a national scale, using a standard methodology. Fortunately, from the 2012/2013 season onwards, all this is going to change! November 2012 saw the start of a project to monitor geese during migration and overwintering in Poland. This programme has been included in the “Monitoring of Birds in Poland”, coordinated by the Polish Society for the Protection of Birds (OTOP). Goose monitoring is part of a larger wildlife monitoring system maintained by the Chief Inspectorate for Environmental Protection and financed by the National Fund for Environmental Protection and Water Management. This programme is to be coordinated by the Polish Society for Nature Protection Salamandra.

In recent years, the presence of large numbers of geese in the agricultural landscape, have created conflicts with agriculture. This, together with hunting and the rapid expansion of wind power facilities means that interest in geese is much greater in Poland now than it ever was before. The new monitoring programme will supply data on the populations of the two most important goose species migrating and wintering in Poland – Bean Goose *Anser fabalis* and Greater White-fronted Goose *Anser albifrons*. These are the most numerous species of geese occurring in Poland in the post-breeding season. The large flocks of these two species formed the basis for designating 29 Natura 2000 Special Bird Protection Areas (WILK *et al.* 2010). Depending on the year, between 5% and 40% of the European populations of these species congregate in Poland (STASZEWSKI & CZERASZKIEWICZ 2001; own data). The project plans to cover the 100 most important goose roosts – i.e. those sites regularly used (usually annually) and accommodating flocks of more than 1000 individuals between 2000 and 2011 (ŁAWICKI *et al.* 2012, Fig. 1). Counting will take place prior to the morning foraging flight on four occasions: in autumn, in winter and twice during the spring migration.

This goose monitoring programme in Poland is intended to be a long-term one. We are pleased that after such a long break, due to the lack of data from across the country, we will soon be able to share with you new and complete data from across Poland.

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Fig. 1. Locations of the most important goose roosts in Poland between 2000 and 2011 (based on ŁAWICKI et al. 2012).



Goose catching in ancient Egypt, according to an ancient wallpainting.



## Interspecific Genetic Exchange: Species are not Isolated Gene Pools

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### Abstract

The debate on which species concept to use in ornithology (Biological versus Phylogenetic) has given rise to the notion that species are isolated gene pools without any gene flow between them. However, interspecific exchange of genetic material by hybridization is widespread in birds, particularly in geese. Despite these high levels of hybridization in geese, no clear study has yet assessed the degree of genetic exchange between wild goose species. Nevertheless, there are some strong indications that goose species cannot be regarded as isolated gene pools.

### Species Concepts

One of the biggest debates in biology concerns a seemingly simple question: What is a species? Numerous species concepts have been formulated to provide an answer to this question (CLARIDGE *et al.* 1997). Two main species concepts have dominated the discussion in ornithology: the biological and the phylogenetic species concepts.

The biological species concept can be defined as “*a group of interbreeding natural populations that is reproductively isolated from other such groups*” (MAYR & ASHLOCK 1991). This concept emphasises reproductive isolation.

There are several versions of the phylogenetic species concept, but the most widely used definition is formulated by CRACRAFT (1983): “*the smallest diagnosable cluster of individual organisms forming a monophyletic group within which there is a parental pattern of ancestry*”. Monophyly implies that a group of organisms can be traced back to a single ancestral form, i.e. they form a clade, of which the members are more closely related to each other than they are to anything else.

Which concept should be used in ornithology is irrelevant here. However, an important consequence of this debate is that species have been regarded as separate gene pools without any gene flow occurring between these gene pools. MAYR & ASHLOCK (1991) even stress the idea of separate gene pools explicitly by stating “*A species is a protected gene pool [that is] shielded by its own devices against unsettling gene flow from other gene pools.*” This is, however, not the case, as interspecific gene flow is a common phenomenon, especially in birds.

### Interspecific gene flow

Hybridization can facilitate the exchange of genetic material across species boundaries (through the process known as introgression). Although hybridization is known to be widespread in birds (GRANT & GRANT 1992), relatively few cases of introgression have been documented.





The first instance of introgressive hybridization in birds was presented by TEGELSTROM & GELTER (1990) in a study on Collared Flycatcher *Ficedula albicollis* and Pied Flycatcher *Ficedula hypoleuca*. These findings were confirmed by other studies on Flycatchers (SAETRE *et al.* 2001, BERGE *et al.* 2005).

Furthermore, hybridization and consequential exchange of genetic material have been found in other bird taxa as well (HELBIG *et al.* 2005, VALLENDER *et al.* 2007, CARLING & BRUMFIELD 2009, RHEINDT *et al.* 2009, RUSH *et al.* 2009).

The Anseriformes (ducks, geese and swans) not only show the highest propensity to hybridise amongst birds (GRANT & GRANT 1992) but a large proportion of interspecific hybrids (20 %) in this order has been reported to be fertile (SCHERER & HILSBURG 1982), so there is potential for extensive introgression between certain species.

Most research on the patterns of introgression has been done on ducks. The first genetic analysis of hybridization between two duck species, New Zealand Mallard *Anas platyrhynchos* and Grey Duck *Anas superciliosa*, revealed exchange of genetic material from Mallards to Grey Ducks and vice versa (RHYMER *et al.* 1994). Introgression has also been documented between Mallard and Eastern Spot-billed Duck *Anas zonorhynchos* in Russia (KULIKOVA *et al.* 2004), and between Gadwalls *Anas strepera* and Asian Falcated Ducks *Anas falcata* (PETERS *et al.* 2007). And recently, KRAUS *et al.* (2012) reported high levels of genetic exchange between six sympatric *Anas*-species. Surprisingly, the classical example of hybridization between White-headed Ducks *Oxyura leucocephala* and introduced Ruddy Ducks *Oxyura jamaicensis* in Spain does not result in extensive introgression. Low levels of genetic exchange between these species have been attributed to a successful Ruddy Duck and hybrid control programme (MUNOZ-FUENTES *et al.* 2007)..



In concordance with ducks, geese also show high levels of hybridization (MCCARTHY 2006). However, no study has yet assessed the magnitude of genetic exchange between wild goose species. There are nonetheless some indications that goose species cannot be regarded as isolated gene pools. An important feature of introgression is discordance between phylogenetic trees (TOEWS & BRELSFORD 2012).

Comparisons between phylogenies based on morphological data (LIVEZEY 1996) and mtDNA (RUOKONEN *et al.* 2000, DONNE-GOUSSE *et al.* 2002) reveals some interesting patterns; based on morphology, Greater White-fronted Goose *Anser albifrons* and Lesser White-fronted Goose *Anser erythropus* are sister-species, whereas mtDNA indicates that Lesser White-fronted Goose is more closely related to Bean Goose *Anser fabalis* and Pink-footed Goose *Anser brachyrhynchus*.

More direct evidence of genetic exchange is provided by RUOKONEN *et al.* (2007), who reported the occurrence of Greater White-fronted Goose genes in the captive stock of Lesser White-fronted Geese. They ascribed this sharing of genes to past hybridization in captivity, although this pattern might also be explained by other processes, such as maintenance of ancestral polymorphisms and/or incomplete lineage sorting (MADDISON 1997, FUNK & OMLAND 2003).

All the examples mentioned above indicate that there is a widespread exchange of genetic material between bird species, including geese. These patterns of introgression refute the idea of species as isolated gene pools immune to gene flow and challenge the viability of the biological species concept, which relies heavily on reproductive isolation.

In the scope of this study it is planned to unravel these patterns of introgression in geese. By using whole genomic data, it is possible to detect genomic regions that are susceptible to introgression. Furthermore, regions that do not show signs of introgression might be important in maintenance of species integrity.

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## Amazing Travels of the Red-breasted Goose Trio – Aldo, Teddy II and Pavel Patev

Bulgaria-US Red-breasted Goose Project update April 9 2013

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Ed Michels, Ecodat.

It was a short winter season in northeastern Bulgaria, and by early February wintering Red-breasted Geese (*Branta ruficollis*) appeared to be leaving the area. The Bulgaria-US Red breasted Goose team had not yet assembled for capture and transmitter deployment in the field, and thus the team was very concerned. Would this be a lost season for satellite tracking the birds? The entire team and satellite transmitters were field ready on 13 February 2013, and foot nooses were deployed at night on a field that had Red-breasted Geese foraging on fresh green growth that entire day. It was proposed to deploy five Argos/GPS solar satellite transmitters in February 2013 on Red-breasted Geese (RBG) in Bulgaria. Three of these were deployed. The arrival of early spring in Bulgaria in February 2013 made it very challenging to catch all five Red-breasted Geese as most birds had started leaving the country to begin spring migration by mid-February.

On the morning of 14 February the first Red-breasted Goose was captured. He was a young male. He had the honour of being fitted with Teddy's (from 2012) refurbished transmitter so was named Teddy Roosevelt II (or TR2, or Teddy Valentine!). He also wears a red plastic ring on his right leg with white numerals 05, and a metal ring 5-54824 on his left leg.



Teddy II, after his release

On the afternoon of February 15 the second Red-breasted Goose was captured on the same noose lines! What an amazing stroke of luck, as the birds were not disturbed by the earlier capture and returned to the exact same location to feed, considering how many other surrounding fields were available with fresh green sprouts.



The second bird was a beautiful adult male RBG, and he was named Pavel Patev after the Bulgarian doyen of ornithology. Pavel Patev was fitted with his solar GPS/PTT, red color ring with white numerals 04 on his right leg, and a metal ring 5-54825 on his left leg. He was released on the morning of February 16 2013. Shortly after release, Pavel Patev left in migration to the north towards the Danube Delta (c. 100km north of Durankulak Lake) in Romania. An ornithological contact in Romania informed us that there was a small flock of 177 Red-breasted and about 3 000 White-fronted Geese (*Anser albifrons*) at this location. People even photographed Pavel Patev!



Pavel Patev, before release and one day later in Romania

After the first two captures we were all becoming quite concerned whether we would be able to capture any more geese this winter. Temperatures were on the rise, all signs indicated the end of winter, and flocks of geese were seen leaving the area; spring migration had begun. Our plans for this season were to deploy five GPS/PTTs, and we were fortuitous to have two successive successful captures, back to back. We had moved our foot nooses from field to field based on where the birds had been foraging, but our luck appeared to be diminishing with fewer and fewer birds left to capture.



Aldo after release

© Bulgaria-US Red-breasted Goose Project

Aldo Leopold after release

Then, on 21 February, we captured our third Red-breasted Goose. This bird was also an adult male, and we named him Aldo Leopold, after the father of wildlife management in the USA. Soon afterwards, Aldo was fitted with his 30 g GPS/PTT, a red band with white numerals 06 on his right leg, and a metal band 5-54826 on his left leg, he was released near the Black Sea.



He flew out to sea first and perhaps rested for a while, but before nightfall, Aldo signaled from the Ukrainian part of the Danube Delta, some 185 km from Lake Durankulak. He spent the night in Lake Kagul (a Ramsar site), not far from the Ukrainian town of Reni, on the Romania-Moldova border, then on 22 February, Aldo moved a further 100 km ENE to reach the grain fields adjacent to the western shore of Lake Sasyk where he spent the day.

It appeared that TR2 was in no hurry to leave Bulgaria, whereas the adult males had moved north on the same day of their release. Perhaps younger birds linger on and are in no hurry to reach the summer breeding grounds during their first spring migration. TR2 finally moved out of Bulgaria on 3 March and landed in Ukraine.

On 20 April 2013, Aldo Leopold was in northern Kazakhstan (just south-east of the Ural Mountain), Pavel Patev also entered Kazakhstan and was 650 km behind Aldo, and Teddy II was near Logovskiy, Russia, continuing to build his body reserves.

Pavel Patev and Aldo Leopold reached the Taimyr Peninsula almost at the same time and, during mid-June 2013, they were exploring the arctic tundra north of the city of Norilsk. At that time, Aldo was roaming 70 km SE from Lake Nadudoturku, somewhere along the Bystraya River and Pavel Patev was refuelling at Lake Purinskoye, which according to Yasha (Yakov) Kokorev is a well known Red-breasted Goose breeding and moulting site. Pavel was located 120 km east of Aldo.

Teddy II then followed a route unfamiliar to us! He crossed the Ural Mountains and by mid-June 2013 was located 90 km west of the City of Beryozovo (Ob River).



Map of the migratory routes of three transmitted Red-breasted Geese from Bulgaria until mid-June 2013

All three Red-breasted Geese continued migrating in a leap-frog fashion, stopping over at certain locations for extended periods of time. These areas along their migration route are perhaps some of the very important staging and stopover sites that need additional attention from a conservation and protection perspective. The three Red-breasted Geese have also shown some incredible stamina, flying non-stop for hundreds of kilometres! The energetics involved in such long distance migration is truly something to marvel at, and hopefully all conservationists can join efforts to make their journeys safe along the entire flyway.

The 2013 satellite tagged Red-breasted Geese are sending very valuable location data, and are helping build upon our initial success in determining migration routes, stop over sites and threats along these pathways.

Teddy I – the first satellite tagged Red-breasted Goose from 2012, Pavel Patev and Aldo Leopold appear to have very similar migratory routes, and stopover sites, after they left Romania. The time they have spent at their stopover sites has not yet been analysed, and this analysis will be completed in the next few months. Here we present some similarities and variations.



Mixed flock of Red-breasted and White-fronted geese wintering in Bulgaria

Once the Red-breasted Geese left Bulgaria, they spent time at different locations in Romania. Teddy from 2012 spent time in Calarasi, Romania, whereas Aldo spent 15 days on the huge island located between the two main arms of the Danube River, and Pavel Patev remained for 20 days in Sinoe, while Teddy II explored the northern part of the Danube Delta in Ukraine. Last year, Teddy I subsequently spent 10 days in the Pryasovski Reserve and Lake Hanskoe in Ukraine (SIMEONOV & POSSARDT 2012).

Aldo just flew over these locations but did not stop. On 10 March 2013 he left his inner Danube area south of Braila at 9 pm and 13 hours later (11 March at 10 am) he landed on the eastern corner of the Azov Sea, completing a journey of 950 km. We were impressed to learn that Aldo flew a distance of 195 km in exactly 2 hours, which shows an average speed of almost 100 km/h – an amazing record!



Patev chose another stop over location en route and spent 10 days in the Sivash National Park in Crimea. Teddy from 2012 and Aldo used the same stopover site at the Manych depression in Kalmykia spending more than three weeks there. Patev didn't go to Manych and staged northward to the Sarpa Lakes, then moved back south due to cold weather, and finally entered Kazakhstan, southeast of Saratovskaya (Russia), where he stayed for more than a week resting and refuelling. Aldo pushed on ahead during this time and spent time in another part of Kazakhstan, southeast of Chelyabinskaya (Russia). Teddy I from 2012 also migrated over Northern Kazakhstan, but its journey came to an abrupt end as the bird was shot on 15 May 2012 near the Russian-Kazakhstan border, 8 km south of Ukrainka village (SIMEONOV & POSSARDT 2012).

Whereas the two adult Red-breasted Geese fitted with satellite transmitters reached the breeding area in June Teddy II veered off west from the direction of the other two Red-breasted Geese, and reached the tundra one month after Aldo Leopold and 20 days after Pavel Patev.

In late June all three Redbreasts made it successfully to their summer grounds, without any untoward incident, beyond the natural challenges that long distance migrants face during their gruelling migrations.



Map of the migratory routes of three transmitted Red-breasted Geese from Bulgaria until late June 2013

As important as these data will be to guide conservation policy in range countries, this satellite study is a very effective tool in developing public awareness and building stronger national and international collaborations for responsible governmental institutions to provide the needed regulations to protect Red-breasted Geese on their wintering grounds and migration routes.

Already in Romania and Ukraine there are naturalists and bird enthusiasts who have photographed several times one of the satellite tagged Red-breasted Geese (Pavel Patev) this year, and sent our Bulgarian partner all the information from two different staging places (one in Romania and one in the Syvash National Park in Ukraine) that differed from last year's Teddy's stop-over locations and even from the 2013 Red-breasted Goose trio. The information from the three different observations made by Daniel Petrescu, Nicu Calin and Yuriy Andruschenko also confirmed the same size of Patev's flock (173 Red-breasted Geese) on their locations, but the number of White-fronted Geese differed (3,000 in Romania – Sinoe, and only 107 in Ukraine).

The Bulgaria-U.S. project has set in motion a desire to connect people along the Red-breasted Goose migration route and landscape. It will take enthusiastic people from the many geopolitical boundaries that this species traverses to help in Red-breasted Goose recovery efforts. Such network will also help identifying the type of the staging/stopover locations, habitats and diet of the species and the size of migrating (numerous) small or large flocks, pure or mixed species flocks along the flyway.

Frequent map updates are posted on the website [www.redbreastedgoose.org](http://www.redbreastedgoose.org) and these updates are being followed by conservationists across the Red-breasted Goose flyway and beyond. Daily maps are posted at the website [www.seaturtle.org](http://www.seaturtle.org). There appear to be good hunting regulations at certain locations along the migration route, and this needs to be more widespread along the entire flyway. Teddy I was shot in May 2012 in Kazakhstan as a result of legal hunting during spring migration, and this highlighted the problem with legal and illegal hunting in a very compelling way.

The Bulgaria-U.S. Red Breasted Goose Project is a joint effort between Le Balkan Bulgaria Foundation and U.S. Fish & Wildlife Service established in 2010 with collaboration and support from the Bulgarian Ministry of Environment and Water, San Diego Zoo, Bettembourg's group of Lëtzebuerger Natur- a Vulleschutzliga, Mohamed bin Zayed Species Conservation Fund and Branta Tours Ltd.

### Acknowledgements

Numerous volunteers and colleagues from many countries have also been hugely important for the success of this project and conservation effort. The volunteers involved are from Bulgaria, Romania, USA, Holland, Ukraine, Belgium, Germany and Russia, all staying and working together at Branta Birding Lodge & Conservation Center.

We would like to thank the following individuals for their interest and fruitful collaboration in this project: James Bland, Ed Michels, Sergej Soloviev, Sonia Rozenfeld, Didier Vangeluwe, Nicu Călin, Yuriy Andryushchenko, Vladimir Kazmin, Paul Goriup, Johan Mooij, Lena Lebedeva-Hooft, Peter Glazov, Daniel Petrescu, Viktor Badmaev, Pavel Zehtindjiev, Tanyo Michev, Hervé Teerlynck, Strahil Peev, Mihai Baciú and Tatyana Simeonova.

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## Lemmings and Lesser White-fronted Geese in Norway

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*The lemming years of 2010 and 2011 provided plenty of easy food for small predators in northern Norway allowing the Lesser White-fronted Geese to breed in peace. As a result the long term high of 13 broods with an average of 3.4 goslings each was counted in August 2011 in the Valda marshes, the traditional autumn migration gathering area. One year later, the return to reality was abrupt with only 3 broods totaling 12 young. Also most of the previous years' young birds were absent.*

“Once in four years, the lemmings living on the highest mountain tops in northern Norway begin their enormous expansion over all of Lapland”. That used to be the common belief. Siberian relatives of our lemmings may still show a regular pattern like that but in Europe predicting the lemming years now is more difficult, if not impossible. According to friendly personal information from Prof. Heikki Henttonen (of the Finnish Forest Research Institute Metla), the following were lemming years 1937-1938, 1942 (local), 1946 (local), 1959 (local), 1960 (small), 1969–1970 (great), 1974, 1978 (intermediate), 1982 (weak), 1997-1998 (ended prematurely), 2001 (weak), 2007 (focus in Norway), and 2010-2011 (strong). The distances between these maximum years are 4, 4, 23-24, 4, 4, 4, 15, 4, 6, and 3-4 years. If there is double periodicity we should now expect another long gap. Since the list above only contains two of the long gaps, we cannot be certain of anything. Instead, we have, for much more than a decade, been engaged in attempts to forecast the numbers of Lesser White-fronted Geese. At first sight, the recent sudden temporary increase and then dramatic crash in their reproduction success seems to be in conflict with our earlier expectations. But does it? And what is the connection to the lemmings?

### The observed effect of lemming years

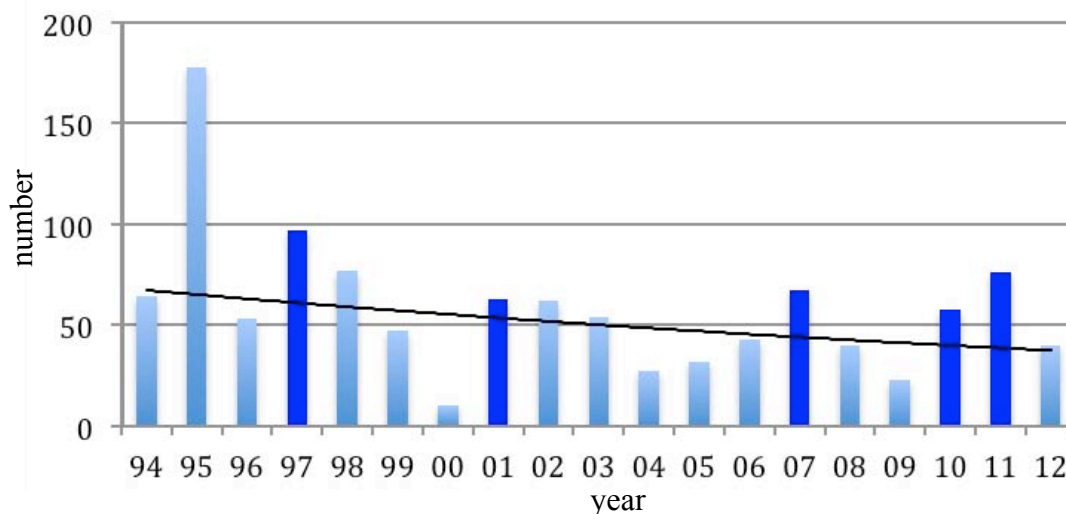


Fig. 1: Autumn LWfG in Norway (ad + juv) (Source: [www.piskulka.net](http://www.piskulka.net)).



Figure 1 reproduces the "Piskulka page" data showing the August concentrations of Lesser White-fronted Geese in the ValdaK marshes, Porsanger Fiord Norway. Lemming years are marked as dark columns. The fitted down sloping curve is the exponential trendline.

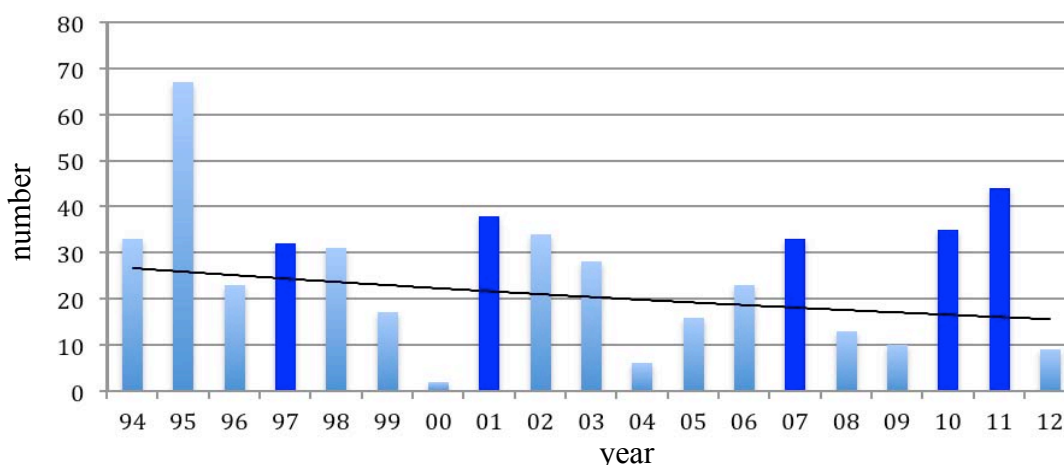


Fig. 2: Annual number of goslings in the ValdaK Marshes (Source: [www.piskulka.net](http://www.piskulka.net))

Figure 2 shows the "Piskulka page" numbers of goslings counted in August at ValdaK. Lemming years are again marked as dark columns, and the fitted curve represents the trend as an exponential decrease.

The year 2000 was marked by unusually adverse weather conditions. Apart from that, both Figures show a continuing decrease in the population. Peak counts are still associated with lemming years. The total autumn population has declined by an average of 3.0 % per year (Fig. 1), which roughly corresponds to a halving of the total population in 20 years.

Fig. 2 shows the average decrease in the number of autumn juveniles at a rate of 2.7 % per year. The slightly lower decline amongst juveniles reflects an increase in the average breeding productivity over the same period. This is corroborated by calculating an annual breeding productivity measure, expressing the number of juveniles present in autumn per adult present in spring.

This has increased slightly from 0.68 in the first decade to 0.77 in the second, 0.71 over the whole period (Fig. 3).

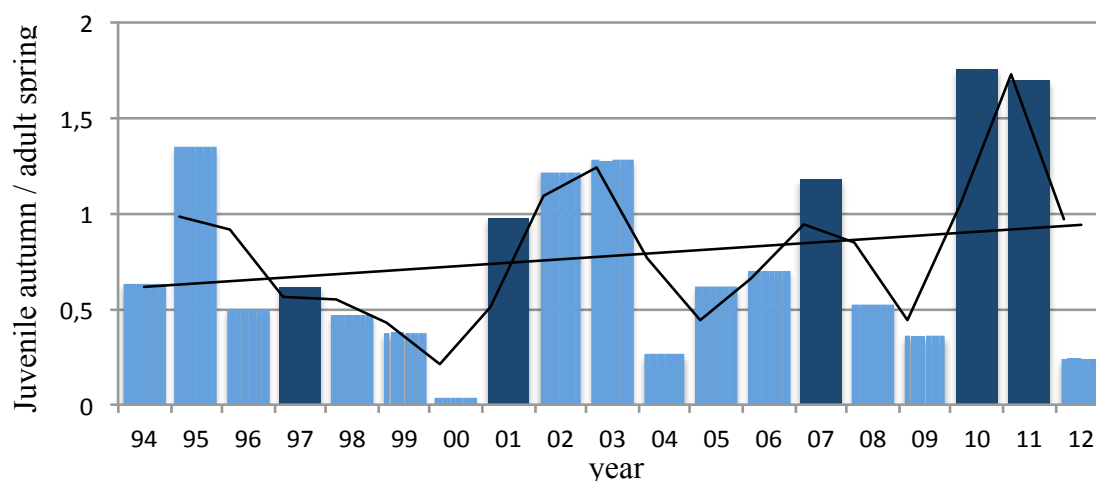


Fig. 3: Breeding result

The recent cluster of lemming years is reflected in an increase in productivity in recent years which contributes to the improvement in the breeding ratio.

Note the extreme poor breeding year in 2000 and – perhaps more interestingly - the differences between lemming and non-lemming years. This difference seems to be increasing, with the difference in productivity between a lemming year and the following non-lemming year seemingly being greater in more recent years (Fig.4).

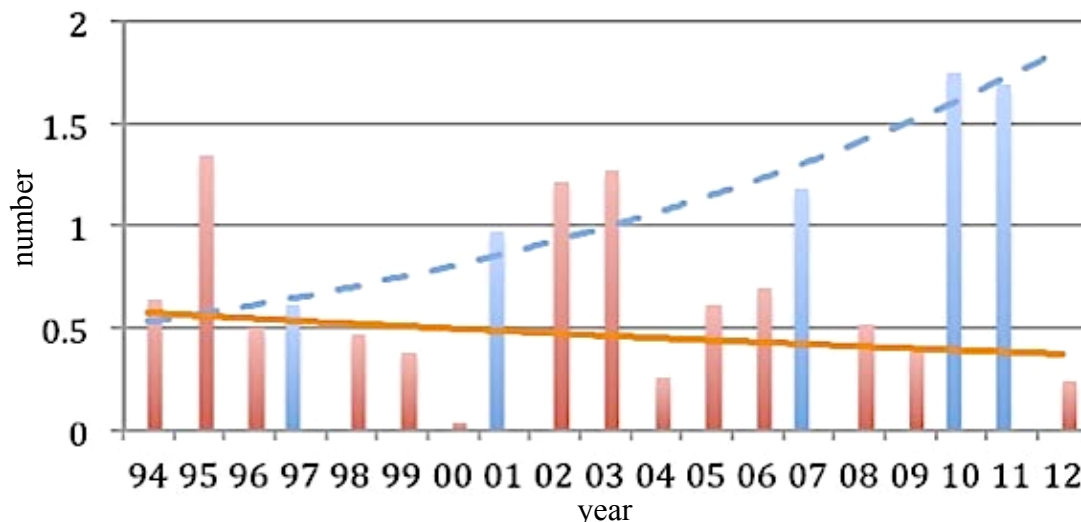


Fig. 4: LWfG breeding result in lemming and non-lemming years

### The interaction

In lemming years, predators find it so much easier to take alternative prey that they lose interest in hunting the geese. This contributes to the explanation of the above average breeding success in those years. Like the geese, the predator numbers multiply in the lemming year, so after the crash of the rodent population there are many predators around, and they are hungry. This helps to explain the dramatic reductions in goose breeding productivity in the following year without lemmings. A gradual recovery follows when the predator numbers normalize. A cycle visible in Fig. 1 shows that, after the crash, it took about three or four years for the goose population to decline to about half of the previous peak size. Figs. 2 and 3 give the explanation: very few juveniles are added to the population, but because of the many hungry predators around, probably adult and subadult mortality are also slightly increased in the post-lemming summer, whilst migration/winter mortality of course continues unaffected by lemming abundance in the breeding area.

The apparent increase of amplitude between the ups and downs in breeding success might be due to an overall increase in the abundance and species of small predators, in particular the increasing numbers of red fox (*Vulpes vulpes*), in the area. However, we cannot exclude if changes in observation intensity, skill and reporting has affected the patterns in the data during the last two decades.

### Interpretation

We should keep in mind that Lesser White-fronted Geese mortality also occurs on migration and in the winter quarters and this may be affected by age and migration route. Generally young birds have a much higher mortality rate than adults, and birds taking the long eastern route (after the moult migration) have a higher mortality than birds that migrate more directly to Greece.

WWF estimates of mortality during their first winter was c.78% for goslings and c.16% for adult birds. Using count data from the lemming year 2007 (29 adults, 5 sub-adults and 33 goslings in the Lesser White-fronted Goose population counted in the autumn), we would expect 24 adults, 4 subadults and 7 juveniles in spring 2008. That summer (a non-lemming year) they should have experienced low breeding productivity. In fact they produced 0.52 young/(sub)adult. For simplicity, summer mortality is included in the mortality numbers already, so we assume that all spring birds survive in autumn, and we arrive at an estimated autumn 2008 flock of 51 birds (29 adults, 7 subadults and 15 juveniles). We can continue estimating in the same way, and compare with observed counts. In the post-lemming years 2008-2009, productivity was 0.52 and 0.36, and in the two following lemming years the results were 1.75 and 1.69. Adopting these values and the old mortality parameters from ten years ago we can estimate the annual size of the adult and young populations in autumn (Fig.5).

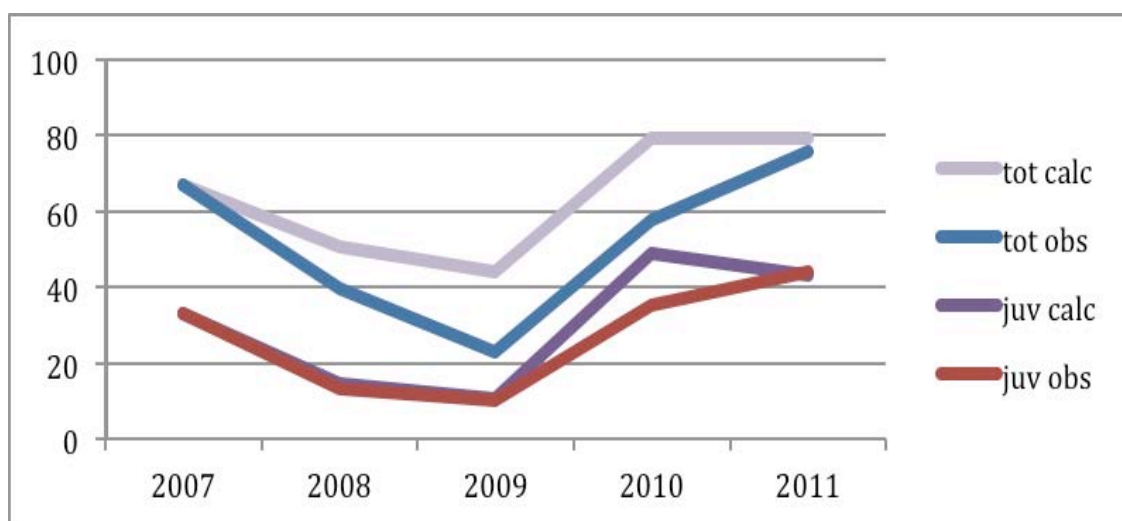


Fig. 5: Observed vs. calculated population estimates for the Lesser White-fronted Goose population during the lemming cycles of 2007-2011.

The estimates are similar to the observed numbers of adults and young. As the reproduction parameters were based on direct field observations, this indicates that the old estimates of annual mortality are probably still applicable today: i.e. they have not changed over the last ten years.

### The need for more details

In the Piskulka page data, subadults are not always counted separately from adults. Therefore, in the above calculations subadult birds are treated as adults, as is the case with generating the breeding productivity index. But subadult birds not only do not breed, they also migrate along the more dangerous eastern route, also taken by non-breeding adults. These subtle but important differences in mortality cannot be calculated from the current data. The apparent 16% mortality of all “adults” represents an average across all adults and subadults and overestimates losses in post-lemming years when the numbers of subadults and non-breeding or failed adults are inflated in the population and the opposite is true in lemming years. This phenomenon may magnify the lemming year fluctuations in goose numbers but has only a small effect on the overall trend.

### Today

In May 2013 the Lesser White-fronted Geese were returning to Norway. On their spring migration they have been counted in Greece and Hungary. As expected, mortality was higher than average. In Greece the largest flocks contained 75 geese in the previous winter, 22 birds (29%) less than expected. In Hungary, the observed decline is even larger (40-48 %).

### Predictions and observations

The effects of lemming cycles on survival and reproductive success of Lesser White-fronted Geese was not discussed at the Goose 2001 meeting in Roosta, where we presented the first predictions for the future of the Norwegian Lesser White-fronted Geese. The predictions were built solely on the average breeding results and adult/juv mortalities, which were estimated to be relatively stable. The main result was to explain the reasons behind the observed average annual decrease in the population of about 5%. Three years later, at the Odessa meeting an improved model took into account random changes in the parameters. Mathematically that was interesting, but the only substantial change in the predictions was quantification of the fact that large oscillations in annual mortality increase the risk for final extinction of a small population. The update at the last scientific assessment of this Lesser White-fronted Goose population, presented at the meeting Xanten in 2007 brought no changes but an extension of the simple prediction scheme to a larger model encompassing not only the Norwegian geese but also the Swedish, Russian, captive and possible future Finnish populations and their natural and artificial interactions (for example, translocating geese from one location to another), reported in the conference proceedings (KAHANPÄÄ 2008). The full model is available at [www.piskulkaconf.tk](http://www.piskulkaconf.tk) by clicking "[Calculate easily the effects of protection measures on LWfG populations!](#)" and "[Background document](#)". Using the model it is easy to check that the recent peak in Norwegian Lesser White-fronted Goose numbers in may be entirely due to the lemming cycles.

### A final remark

A superficial assessment of data from the Swedish reintroduced population revealed a similar effect. The connection between rodents, predators and geese is well known but we were surprised by the apparent strength of its influence. The effect of climate change on lemming years may prove very important for the future of the geese, but for the time being a careful look at the observations has confirmed the importance of captive breeding and quick and strong reintroduction programs.

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## In memoriam: Geoffrey Vernon Townsend Matthews, 1923-2013.

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Geoffrey Matthews passed away on 21 January 2013, aged 89. The son of a Norwich vet, he read natural sciences at Cambridge, had a distinguished record in the Royal Air Force and published a monograph (MATTHEWS 1955) on how migratory birds navigate from his subsequent PhD. Although bird migration continued to fascinate him through his professional life (e.g. MATTHEWS 1970a), his greatest contribution for which he will be remembered was his tireless contributions to the study of waterfowl and, especially, to wetland conservation.



He was quickly snapped up from academe by Peter Scott at the then Severn Wildfowl Trust, now the Wildfowl and Wetlands Trust, where he was to be Director of Research and Conservation from 1955 until his retirement in 1988.

Even before the continent was ravaged by the Second World War, numbers of migratory waterbirds had been seriously declining and Geoffrey and Peter saw the urgent need for the international collaboration that was essential for their effective conservation. In the early days, Geoffrey concentrated on researching Britain's wildfowl species and the establishment of a network of reserves and refuges across the United Kingdom and was deeply involved in pioneering the use of volunteers in monitoring, or "citizen science" long before this concept became widely known (MATTHEWS 1970b), but it was evident that such input was even more necessary at the flyway level, linking conservation efforts across national boundaries.



**IWRB**

He was instrumental in the founding of the International Wildfowl Research Bureau (now Wetlands International), became its first British delegate and ultimately its Honorary Director from 1969. He was tireless in his endeavours to engage with countries on the Eastern Bloc, not least the then USSR, during the "Cold War" period, the breeding grounds for so many of the wintering

waterbirds of western Europe. He invested considerable personal energy to involve these countries in international efforts to safeguard migratory bird populations.

Geoffrey was highly instrumental in the drafting of the historic Ramsar Convention (with so many other supporting players, not least Luc Hoffman, Eskandar Firouz and Erik Carp) finally signed in 1971. This was the first ever international convention that bound 18 countries (including Russia and other Iron Curtain states as well as the host country Iran) to collaborate and safeguard wetlands and the migratory waterbirds and other wildlife that they support, and it enshrined the doctrine of the "wise use" of wetlands.



**RAMSAR**





Forty years on, we now rather take Ramsar and all its achievements very much for granted, with its 164 member states and more than 2,000 designated sites of international importance covering 200,000,000 hectares of habitat, but at the time this was a simply radical concept, and a massive contribution to safeguarding wetlands for the future of the planet. Ramsar's achievements at that time are in no small measure part of the reason that we can enjoy many of the wetlands that still exist today. In 1993, he published an account of the history of the Ramsar Convention (MATTHEWS 1993) and famously announced that on his death the word "Ramsar" would be found emblazoned upon his heart.

I have much for which to thank Geoffrey personally: he appointed me to my first position at the Wildfowl Trust at Slimbridge and I fondly remember him as a great raconteur. With his many friends and colleagues around the globe and the many miles of international travel achieved during his long life, he had a great many rich and engaging stories to tell and I used to listen in thrall as he recalled his very many adventures and often hilarious recollections. He remained highly committed to waterbird science and conservation and was active throughout his working life. As well as his numerous listed achievements, it should not be forgotten that he continued to publish on avian navigation, ducks, geese and swans as well as tutoring students at Bristol and Cardiff University and editing the WWT journal "Wildfowl" for 20 years. However, Geoffrey's greatest permanent contribution has to have been the part he played in safeguarding the wetlands of the world for us, the next generation. For that enormous contribution he was widely recognised, having been awarded the British Ornithologists Union Medal (1980), the Royal Society for the Protection of Birds Medal (1990), Officer of the British Empire (1986) and Officer of the Golden Ark (from Prince Bernhard of the Netherlands 1987). What tickled Geoffrey the most, however, was the fact that his name would forever be celebrated in the scientific name of a Mallophage feather louse of the Greylag Goose, *Ornithobius matthewsi*, named after him by František Balát in 1974 (BALAT 1974).

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## In memoriam: Oscar J. Merne, 1944-2013

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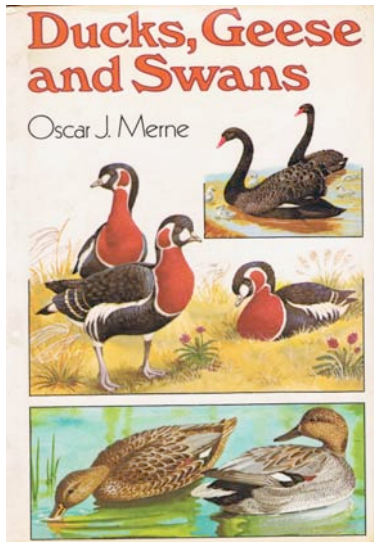
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Oscar Merne passed away on 17 January 2013, when Ireland lost one of its most outstanding ornithologists. Always fascinated by birds, Oscar cut his teeth coordinating avian monitoring work in the mid 1960s and was a key element in organising coverage of seabird colonies during Operation Seafarer in 1969-70. From that, he assisted the great Irish broadcaster Éamon de Buítléar (who sadly also died on 27 January 2013) in Ireland's first ever home produced nature programme *Amuigh Faoín Spéir* ("Out Under the Sky" which was ever where Oscar was happiest). In particular, the period from 1965-1967 was an epoch for waterbird conservation in Ireland, when, together with Major Robin Ruttledge, Fergus O'Gorman, Brian Stronach, David Cabot and others, Oscar helped form the Irish Wildfowl Committee, was instrumental in the creation of the Irish Wildbird Conservancy (now Birdwatch Ireland) and forged links between WWT, BTO, RSPB and the regional game councils throughout Ireland to establish a network of important wetland sites and associated monitoring programmes.



It was therefore logical that when the post was created, Oscar should be employed by the National Parks and Wildlife Service in 1969 as the first ever warden of the newly established Wildfowl Reserve on the North Sloblands at Wexford in SE Ireland, home to more than one third of the world's population of Greenland White-fronted Geese. Purchased with grant aid from WWF and jointly owned by the then Irish Wildbird Conservancy, Oscar set to this prestigious task with a vengeance, undertaking weekly counts at the Slobs and quickly beginning to understand their habits and behaviour.

He carried out pioneering research at the site, contributed enormously to improving the conservation management of the site for the geese and was a fantastic advocate for the reserve and (the) especially the geese that wintered there. He was instrumental in contributing to the provision of hunting free areas on the North and South Slobs for waterbirds in general, but for the geese in particular, and was a pioneer in bringing together the various landowners, hunting clubs syndicates on the Slobs to ensure the sustainable nature of hunting on this important National Nature Reserve.



But Oscar was never one to sit on his laurels, and even before this appointment, Oscar had his sights on greater things. His ground breaking use of aerial survey enabled the monitoring of waterbirds in many of the vast and inaccessible wetlands of the west of Ireland (particularly the Shannon floodplain, Loughs Derg and Ree) which continue to this day, and his passion for seabirds also benefitted from similar surveys from air and sea of colonies along the vast stretches of Irish coasts. He also made a massive investment in ringing seabirds over very many years at many remote and inaccessible offshore colonies and will be especially remembered for his major contribution to the conservation of the Roseate Terns on Rockabill Island. This incredible broad experience inevitably called him away from his active work in the

field and in the mid 1970s, Oscar moved to take up an NPWS office job at Sidmonton Place in Bray, where his work was to increasingly revolve around the cataclysmic changes wrought to Irish nature conservation by the effects of European Union legislation. In particular, the Birds Directive initiated an increasing mountain of work associated with the identification and designation of Special Protection Areas throughout Ireland, a task which Oscar initiated and tackled with relish. Towards the end of his remarkable professional life, Oscar travelled widely and was a tireless but true ambassador for Ireland's remarkable wildlife, representing his government at meetings of the Ramsar, Bonn and Berne Conventions, Convention on Migratory Species, the European Commission's Ornis Committees, as well as acting on behalf of Ireland at forums such as the International Ornithological Congress.

Despite these responsibilities, Oscar continued to orchestrate the Irish ringing scheme under the umbrella of the BTO in the UK and stimulated generations of ringers (especially those keen on seabirds) and wetland bird counters that continue to bear the torch for the research and monitoring to which he was so dedicated. Oscar was a meticulous observer and keeper of records, as well as a superb communicator, a gifted speaker and abundant author; he contributed over 275 papers, articles, reports and book chapters, fitting his very last two contributions printed just before his death as the first and last papers in the latest edition of the journal *Irish Birds* for 2012.

Oscar was an absolute gentleman, and his rich measured tones were also the epitome of a relaxed thoughtful good nature. His stories were endless and engaging, but his vast knowledge of Ireland's birds and the sites and habitats that they use was second to none, now sadly lost to us. He was an eloquent, selfless and active contributor to our knowledge of Irish geese, especially through his work with the Greenland White-fronted and Light-bellied Brent Geese. I felt very privileged to have worked with him in just one tiny facet of his extensive knowledge and all who knew him shall all miss him greatly.





**In memoriam Tatiana Borisovna Ardamatskaya,  
25 October 1927 - 24 October 2011**

**Introduction by Lena Lebedeva-Hooft**

One day before the next, hard to believe, birthday... Was she almost 84? That's impossible! Was she then 74 when we travelled together last time to one of the bird-related meetings? Was she 64 when we first met in Odessa after I already heard so much of this great woman from elder colleagues and friends? Somehow she happens to be in my memories always the same, always full of energy, almost exploding enthusiasm, laughing in the most difficult situations. Is it already almost two years that she could be met only in dreams and memories?



We never worked together in the field. My interests – in waders – was also rather far what the interests Tatiana had. May be there were only two areas we overlapped: passion for birds and bird conservation, – including its international significance, – and a lot of good friends in common.

One of these meetings with friends I will remember forever – an evening with Tatiana, with Janis Viksne, Dima Nankinov, Vitaly Biancki, Raivo Mand... Very good international story telling, all related to birds only. Without borders. Was that Kazan' evening the last one we met? Quite possible.

Tatiana Borisovna was a very special person. And I started to write something personal and special – but it wrongly comes up as a collection of rather personal memories, which characterise Tatiana perfectly well – but which are certainly not enough. Thus I have changed my mind half-way: I translate for those who cannot read Russian – very touching, very detailed, and with very good and appropriate humour – in memorium that was written in 2011 by Alexander I. Koshelev and Josef I. Chernichko. They wrote these words in memorium with the title Tatiana would have been proud to read. Why don't we say good words to colleagues and friends when they are still alive?

**Monitoring of waterbirds and coastal birds in the south of the Ukraine: through the eyes and done by hands of Tatiana Borisovna Ardamatskaya (1927-2011)**

**A.I. Koshelev, J.I. Chernichko**

**at <http://ornitology.narod.ru/ardam/ardam3.html>**

**(in Russian, translated by Lena Lebedeva-Hooft).**

It is hard to accept the inevitable reality of life that our colleagues, friends, and relatives pass away. Leave of Tatiana Borisovna proofs this sadly again. We've got used so much to her passionate participation in all our professional activities, that it is still hard to settle in the thoughts that we meet again at one or another ornithological seminars, and it would not be possible to hear her voice, full of energy, or a polite joke or funny comment to somebody's words.

We still cannot grasp fully the significance and the amount of new facts Tatiana Borisovna Ardamatskaya contributed to ornithology. Tatiana Borisovna started her professional ornithological work in the renaissance of the national science of ornithology in 1950s – initially as research scientist at the Azov-Sivash state nature reserve (recently the Azov-Sivash nature park), and since 1953 as the research scientist of the Black Sea reserve (recently the Black Sea Biosphere Reserve). She was always an active participant in all the ornithological conferences

of the Soviet Union, and she was able to find and allocate time and funding for this. And she successfully represented national science at many international fora, owing to the good knowledge of German and good personal networking with many foreign scientists.

Waterbirds and coastal birds that occurred in the reserve throughout all the seasons of the year were the first study objects for Tatiana Ardamatskaya. Many years ahead she scrupulously collected data on their distribution and numbers in the periods of breeding, seasonal migrations and wintering, refining the knowledge on spatial distribution, behavior, habitat preferences, and protection and conservation methods. For the first time ever for the Black Sea reserve she found Red-crested Pochard (1967), Pochard (1980), and in the latest years also the Pygmy Cormorant, White Pelican as well as first records and subsequently breeding of the Common Eider, a new national bird species for the Ukraine.

Based on the field results, Tatiana published dozens of papers, also those like monographs - on Gadwall, Red-breasted Merganser, Common Eider, Mute Swan, Shelduck, Common Coot, Caspian Tern and Avocet. It is quite possible that because of these articles, together with emphatic and emotional presentations Tatiana Borisovna made in press and media as well as at conferences, that some of these species were listed to the Red Data Book of the Ukraine. Strangely having in mind the 'charisma' birds, Tatiana had her own loved ones and those she disliked. Among the latter species she listed the Hooded Crow, Great Cormorant, Caspian /Yellow-legged Gull; and from the mammals the Red Fox and the Raccoon Dog. No wonder!



They were "predating clutches and nests of the other birds"... and often whole colonies were lost at the islands. Actually that was the reasoning used, and supported by Tatiana, that a sort of biotechnology regulatory mechanism were introduced within the nature reserve.

Starting from the first days in the nature reserve – at first together with B.V. Sabinevsky and V.I. Sevastianov, and later just on her own – Tatiana Ardamatskaya participated in the regular counts, also in the aerial counts, of birds and monitored herself the waterbird wintering areas. Tatiana initiated the delivery of wintering data totals to the global data bank (data on the Azov-Black Sea spots). And though the waterbirds were the primary love species for Tatiana – she had her sincere passion towards gulls and terns. The Greater Black-Headed Gull, always followed by her, and later to become the famous logo of the Azov-Black Sea Ornithologists Group, – well, in Tatiana's reign the numbers of these birds reached a European peak value of 360 000 breeding pairs! From the islands of the nature reserve these birds started to expand their breeding area to the west and to the east. Nowadays the daughter colonies of Tatiana's gulls are common between the Caspian and the Mediterranean coast.

It is worth also to mention specifically for these birds the large-scale-efforts Tatiana made for the ringing of colony-breeding gulls. Owing to numerous ring recoveries from a variety of countries along the migration routes and the wintering grounds it was possible to define much better the range structure of gulls and terns that occur in the Azov-Black Sea region. Thus, it was discovered that the wintering range of the Mediterranean Gull is split, and four isolated wintering sites exist – at the Black Sea coast of the Caucasus, in the Nile river mouth in Egypt, and in the Mediterranean along the coasts of France and Spain, and the coasts of Greece and Italy. Ringing also helped to find out, that the groups of Sandwich Terns stay together for a number of years following one and the same migration route.

To recognize the efforts Tatiana made for development of bird ringing in the nature reserve one can look simply at the figures: since 1972 a total of 344 483 birds of 124 species were ringed. With the ringing recoveries data it became possible, for the first time ever in the southern Ukraine, to learn the dates and routes of seasonal movements, staging areas during the moulting period, and the wintering sites of many waterbirds. For the common species it was possible to obtain data on breeding site tenacity, on mortality and survival rates, life span, and migration



timing details (Mute Swan, Common Eider, Red-breasted Merganser, Gadwall, Shelduck, Little Egret, Grey Heron, Rook, Starling, Great Tit etc.).

Humans live fast, and the deeds of all years behind often get forgotten, but it is still for years that the birds ringed by Tatiana – those that were literally in her hands – will carry on the little steel-ring memories of her on their legs, and the ring recoveries will stay forever in the databases of the ringing centers – in the Ukraine, Russia, and the Euring.

Persistent work done by Tatiana in the breeding colonies of gulls and terns contributed a lot to the studies on colonial breeders. She gave attention to everything: seasonal movements, wintering, impact of colonies on vegetation, relationships between different species, protection of threatened species, breeding waders, invasions etc. In the latest years Tatiana expanded her studies beyond the boundaries of the Black Sea reserve, doing monitoring at the islands of the Karkynit and the Dzharylgach bays. Thanks to her last publications we've learned new things on the bird fauna of the Dzharylgach Island and many coastal sites of the northern Black Sea area. She studied bird communities of the marine islands, the structure of colonies, and biodiversity conservation there in general: she noticed rapid impoverishment and witnessed also total disappearance of colonies, including those located within the nature reserve. Huge colonies of gulls at the marine islands remain now only in the photos and memories, insular breeding sites of Common Eider, Gadwall, and Red-breasted Merganser are under threat. Tatiana observed similar negative trends both within and outside the nature reserve. For example in 1960s up to one million Coots were coming to moult in the bays of the Black Sea nature reserve and ten thousands of geese, ducks and swans were wintering there, whereas in recent years these numbers are ten times, or even hundred times less. What a catastrophe! This worried Tatiana Borisovna a lot. Human activities were the main reasons for this change. Therefore during her whole life Tatiana fought for bird conservation: in the nature reserve and in the region, involving school youth, fighting with the hunters to defend science-based approach for taking of game waterbirds and the proper timing of game season.

Tatiana Ardamatskaya left an extensive and varying heritage, but she always valued first the sea and the birds; these two great loves she had throughout her entire life. Her personal publications archive includes such books as “At the bird islands” (1988), “Rare and endangered animals of the Ukraine” (1988), a number of scientific collective monographs [this is a long-existing Russian wording for scientific transactions wrote by several authors altogether – LLH] such as “Colonial hydrophilic birds of the southern Ukraine (19880; “Red Data Book of the Ukraine: Animals” (1994), “Numbers and distribution of breeding coastal birds in the wetlands of the Azov-Black Sea coast of the Ukraine” (2000) etc. We (her followers and students) still continue to assess the value of what she did. We hope that future generations also will pay respect to what Tatiana contributed to the practical field ornithology. Scientists from the entire Ukraine had the opportunity not only to talk, but also to argue with Tatiana B. Ardamatskaya on numerous bird conservation issues, meeting every year at the annual seminar of the Azov-Black Sea Ornithological Working Group, she founded 32 years ago.

Regretfully, but postponing many things for “sometimes later” as many people do, Tatiana did not manage to prepare and publish an extensive monograph on the birds of the Black Sea nature reserve, where she lived and worked all her life. She was generously spreading thoughts, ideas, original unpublished field data in numerous abstracts and conference talks, in short presentations and rather small articles, and in personal communications with colleagues and friends. If the recent staff of the Black Sea nature reserve would prepare such a monograph, this would be the best memory for Tatiana Borisovna Ardamatskaya – the Ornithologist, the Honorary President of the Ukrainian Union for Bird Conservation (UTOP), the member of the international Menzbier ornithological society.

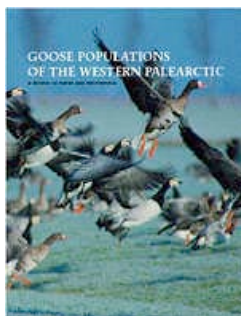


### New Publications 2010/2011/2012/2013

- AVILOVA, K.V. (2011): The distribution dynamics of rare species of Anseriforms in Central Russia. – *Casarca* 14: 54-89 (Russian with English summary).
- BANIK, M.V., V.P. BELIK, A.A. ATEMASOV, T.A. ATEMASOVA, G.L. GONCHAROV, E.V. GUGUEVA, T.N. DEVIATKO, A.YU. SOKOLOV & A.S. SHAPOVALOV (2011): Spring migration of geese and their staging sites in the central part of the Eastern European plain. – *Casarca* 14: 90-123 (Russian with English summary).
- BELIK, V.P., E.V. GUGUEVA, V.V. VETROV & I.G. BABKIN (2012): Spring migration of the Bean Goose in the Middle Volga region and some characteristics of goose migration in Eastern Europe. – *Casarca* 15(1): 22-42 (Russian with English summary).
- BUKREEV, S.A. & V.F. CHERNOBAY (2011): Data on Anseriformes of the Volgograd Sarpa. – *Casarca* 14: 223-239 (Russian with English summary).
- CONG P., X. WANG, L. CAO & A.D. FOX (2012) Within-winter shifts in Lesser White-fronted Geese *Anser erythropus* distribution at East Dongting Lake, China. - *Ardea* 100: 5-11.
- CHUDZINSKA, M., J. MADSEN, J. NABE-NIELSEN (2013): Diurnal variation in the behaviour of the Pink-footed Goose (*Anser brachyrhynchus*) during the spring stopover in Trøndelag, Norway. - *Journal of Ornithology* 154: 645-654.
- DUGINTSOV, V.A., & B.G. KOSTIN (2012): Records of Brent geese (*Branta bernicla*) in the Upper Amur Region. – *Casarca* 15(1): 149-152 (Russian with English summary).
- EMELCHENKO, N.N., & D.S. NIZOVITSEV (2012): The distribution of the Brent Goose (*Branta bernicla bernicla*) on the northern Gydan Peninsula. – *Casarca* 15(1): 43-52 (Russian with English summary).
- FONDELL, T.F., P.L. FLINT, J.A. SCHMUTZ, J.L. SCHAMBER & C.A. NICOLAI (2013): Variation in body mass dynamics among sites in Black Brant *Branta bernicla nigricans* supports adaptivity of mass loss during moult. – *Ibis* 155: 593–604.
- FOUQUE, C., M. BENMERGUI, F. BULLIFFON & V. SCHRICKE (2011): The Egyptian Goose (*Alopochen aegyptiaca*) in France. – *Casarca* 14: 124-137.
- FOUQUE, C., V. SCHRICKE, Y. DAVID & D. SERRE (2011): La bernache du Canada: une espèce exotique devenue envahissante Diagnostic – Plan de lutte – Régulation. – *Faune Sauvage* 290: 18-31.
- GUGUEVA, E.V., V.P. BELIK & V.V. VETROV (2011): Seasonal dynamics of Anseriform diversity and abundance in the Volgograd part of the Volga-Akhtuba floodplain. – *Casarca* 14: 208-222 (Russian with English summary).
- GYIMESI, A. & R. LENSINK (2012): Egyptian Goose *Alopochen aegyptiaca*: an introduced species spreading in and from the Netherlands. – *Wildfowl* 62: 128-145.
- HOLM, T.E. & J. MADSEN (2012): Incidence of embedded shotgun pellets and inferred hunting kill amongst Russian/Baltic Barnacle Geese *Branta leucopsis*. - *European Journal of Wildlife Research*. Online First. DOI: 10.1007/s10344-012-0649-8.
- JONKER, R.M., M.W. KUIPER, L. SNIJDERS, S.E. VAN WIEREN, R.C. YDENBERG & H.H.T. PRINS (2011): Divergence in timing of parental care and migration in barnacle geese. - *Behavioral Ecology* 22 (2): 326–331.
- KUHLMANN CLAUSEN, K., P. CLAUSEN, C.C. FÆLLED & K.N. MOURITSEN (2012): Energetic consequences of a major change in habitat use: endangered Brent Geese *Branta bernicla hrota* losing their main food resource. – *Ibis* 154: 803–814.
- KURVERS, R.H.J.M., B.A. NOLET, H.H.T. PRINS, R.C. YDENBERG & K. VAN OERS (2012): Boldness affects foraging decisions in barnacle geese: an experimental approach. - *Behavioral Ecology* (2012) 23 (6): 1155-1161.
- LENGYEL, SZ., J. TAR & L. RÓZSA (2012): Flock size measures of migrating Lesser White-fronted Geese *Anser erythropus*. - *Acta zool. hung.* 58: 297–303.

- MANSOORI, J. & HAMID AMINI (2011): Current Status of the Lesser White-fronted Goose *Anser erythropus* in Iran. – *Podoces* 6: 123-125.
- NICOLAI, C.A., J.S. SEDINGER, D.H. WARD & W.S. BOYD (2012): Mate loss affects survival but not breeding in black brant geese. - *Behavioral Ecology* 23 (3): 643-648.
- NIJMAN, V., M. ALIABADIAN, C.S. ROSELAAR (2010): Wild hybrids of LesserWhite-fronted Goose (*Anser erythropus*) x Greater White-fronted Goose (*A. albifrons*) (Aves: Anseriformes) from the European migratory flyway. – *Zoologischer Anzeiger* 248: 265–271.
- PORTUGAL, S.J., J.A. GREEN, T. PIERSMA, G. EICHHORN & P.J. BUTLER (2011): Greater energy stores enable flightless moulting geese to increase resting behaviour. - *Ibis* 153: 868–874.
- REES, E.C. (2012): Impacts of wind farms on swans and geese: a review. – *Wildfowl* 62: 37-72.
- ROMANOV, A.A. & I.N. POSPELOV (2010): Intracontinental Spatial Connections of Lesser White-fronted Geese (*Anser erythropus*) from Mountain Subarctic Regions of the Central Palearctic. – *Russian Journal of Ecology* 41: 63-66.
- ROZENFELD, S.B., M.N. IVANOV, M.YU. PLETZ & M.G. NECHAEV (2011): The feeding ecology of the Barnacle Goose (*Branta leucopsis*) and trophic links of Anseriforms on open coastal meadows of the Kanin Peninsula. – *Casarca* 14: 138-169 (Russian with English summary).
- ROZENFELD, S.B., I.A. DMITRIEV & G. SUKHCHULUN (2011): The use of feeding habitats and the food of the Swan Goose (*Anser cygnoides*) in Eastern Mongolia in the pre-migratory period in 2010. - *Casarca* 14: 170-183 (Russian with English summary).
- SCHWARZ, K. & F. WOOG (2012): Limits of grazing area use by feral Greylag Geese *Anser anser* during moult. – *Wildfowl* 62: 117-127.
- SI Y., A.K. SKIDMORE, T. WANG, W.F. DE BOER, A.G. TOXOPEUS, M. SCHLERF, M. OUDSHOORN, S. ZWERVER, H. VAN DER JEUGD, K.-M. EXO & H.H.T. PRINS (2011): Distribution of Barnacle Geese *Branta leucopsis* in relation to food resources, distance to roosts, and the location of refuges. - *Ardea* 99: 217 - 226.
- WANG, X., A.D. FOX, P. CONG, L. CAO (2013): Food constraints explain the restricted distribution of wintering Lesser White-fronted Geese *Anser erythropus* in China. – *Ibis* 155: 576–592.
- WOOG, F., K. SCHWARZ & M. HULME (2012): All you can eat: do peck rates of Greylag Geese (*Anser anser*) vary with age and social status? – *J. Ornithol.* 153: 1025–1029.
- ZÖCKLER, CH., T. HTIN HLA & A. BRÄUNLICH (2012): Status of bar-headed geese (*Anser indicus*) wintering in western Myanmar. – *Casarca* 15(1): 53-59

## Literature



The Goose Specialist Group made an impressive compilation (edited by Jesper Madsen, Tony Fox & Gill Cracknell) of our knowledge on the status and distribution of the goose populations of the western palearctic. This book is not for sale anymore, but a digital copy can be downloaded for free from:

[http://issuu.com/jesper\\_madsen/docs/goosepopulationswestpaleartic](http://issuu.com/jesper_madsen/docs/goosepopulationswestpaleartic)

or from

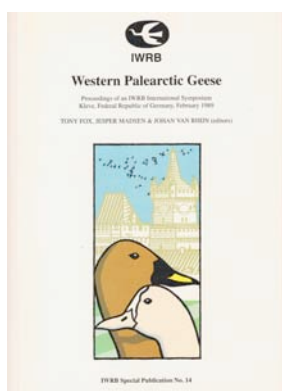
[http://bios.au.dk/en/knowledge-exchange/about-our-research-topics/animals-and-plants/mammals-and-birds/goose-populations-of-the-](http://bios.au.dk/en/knowledge-exchange/about-our-research-topics/animals-and-plants/mammals-and-birds/goose-populations-of-the-western-paleartic/)

[western-paleartic/](http://bios.au.dk/en/knowledge-exchange/about-our-research-topics/animals-and-plants/mammals-and-birds/goose-populations-of-the-western-paleartic/)

The latest edition of the Wildfowl journal are now also available online, for free, at <http://www.wwt.org.uk/what-we-do/publications/wildfowl/archive/wildfowl-issue-61/>.

Furthermore it is still possible to receive a printed copy of the official proceedings of earlier meetings of the Goose Specialist group, as there are:

- IWRB International Symposium on Western Palearctic Geese, Kleve, Germany 1989,
- 10<sup>th</sup> Meeting of the Goose Specialist Group, Goose 2007, Xanten, Germany 2007,
- 12<sup>th</sup> Meeting of the Goose Specialist Group, Goose 2009, Höllviken, Sweden 2009:



Proceedings Goose Meeting 1989  
(Kleve, Germany)

Interested? Please contact:  
[johan.mooij@bskw.de](mailto:johan.mooij@bskw.de)



Proceedings Goose 2007  
(Xanten, Germany)

Interested? Please contact:  
[johan.mooij@bskw.de](mailto:johan.mooij@bskw.de)



Proceedings Goose 2009  
(Höllviken, Sweden)

Interested? Please contact:  
[leif.nilsson@zooekol.lu.se](mailto:leif.nilsson@zooekol.lu.se)



**Call for help:**

As discussed during the Höllviken meeting we invite all goose researchers to send their publications to our data bank of geese literature. Not only international but also local publications (including those in languages other than English) are most welcome.

Please send your publications, preferably as a pdf file, to Fred Cottaar - [fred.cottaar@tiscali.nl](mailto:fred.cottaar@tiscali.nl).







Greater White-fronted Goose (*Anser a. albifrons*) at the Bislicher Insel (Xanten, Germany)  
(© Alfred Steins)

**Your Manuscript  
could have been  
published here !!**

**the next issue of the GOOSE BULLETIN is planned to appear in November 2013, which means that material for this issue should have reached the editor-in-chief not later than the 31st of August 2013.....but earlier arrival is allowed!**



### **Instructions to authors**

The Goose Bulletin accepts all manuscripts dealing with goose ecology, goose research and goose protection in the broadest sense as well as Goose Specialist Group items.

All manuscripts should be submitted in English language and in electronic form. Text files should be submitted in “.doc”-format, Font “Times New Roman 12 point”, tables and graphs in “.xls”-format and pictures in good quality and “.jpg”-format.

Species names should be written with capitals as follows: Greylag Goose, Greenland White-fronted Goose etc. Follow an appropriate authority for common names (e.g. Checklist of Birds of the Western Palearctic). Give the (scientific) Latin name in full, in *italics*, at first mention in the main text, not separated by brackets.

Numbers - less than ten use words e.g. (one, two three etc) greater than 10, use numbers with blank for numbers over 1 000.

In case of doubt please look at the last issue of the Goose Bulletin.

