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# GOOSE BULLETIN

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## Lesser White-fronted Geese *Anser erythropus* in Lower Saxony (NW Germany) – status, distribution and numbers 1900–2007.

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### Abstract

In the period from 1907/08 to 2006/07, i.e. 100 winters, 156 records of 261 Lesser White-fronted Geese *Anser erythropus* were reported in Lower Saxony. The first records were from 9 December 1907. For the period before 1970, only accidental occurrences were reported. A large increase in the number of records occurred in the 1990s and continued in the 2000s. Since the mid-1990s, the Lesser White-fronted Goose has become a regular, annually occurring migratory bird in Lower Saxony. There is evidence of a concentration of records in the north-west of Lower Saxony in the region of East Frisia, especially in the Dollart-Lower Ems-Region (Rheiderland, Emsmarschen) and the Krummhörn including Leybucht, which are key sites of the occurrence. Other important sites are the Middle Elbe and the Lower Elbe.

During autumn migration, the first Lesser White-fronted Geese reach Lower Saxony in mid-October. From early December the numbers rise steadily until early March and peak in the first decade of March (median = 2 March). After that the numbers decrease but birds remain until the first third of April at a relatively high level, and birds are gone by the end of April. In 139 cases (92.1%), Lesser White-fronted Geese were recorded only on a single day, longer stays were reported only twelve times (7.9%, n = 151 records), the longest 27 days, indicating overwintering. About 93% of all observations of Lesser White-fronted Geese refer to birds which were associated in only small flocks of three individuals, and often only single birds (68.6%) occurred (n = 156 flocks and 261 ind.). “Large” flocks have been recorded rarely. 141 Lesser White-fronted Geese were reported as adult birds (86.5%), with only 21 individuals identified as juveniles (13.5%, n = 163). In 75% of records since the mid-1990s (73%, n = 70 records) Lesser White-fronted Geese were roosting with White-fronted Geese *A. albifrons*. In 19% of the records they were with Barnacle Goose *Branta bernicla*, and in 9 % with Greylag Goose *A. anser*.

There is a high likelihood of confusion between Lesser White-fronted Geese and White-fronted Geese during goose hunting, which is usually practiced at dusk at the night roosts of both species. Therefore, to collect data for better protection of Lesser White-fronted Geese in Lower Saxony we started a new research programme in autumn 2012 involving field research, satellite tracking and colour-marking as well as an awareness campaign for birders, hunters and the general public.

**Key words:** *Anser erythropus*, spatial distribution, Germany, Lesser White-fronted Goose, Lower Saxony, numbers.



## Introduction

Lesser White-fronted Geese *Anser erythropus* are one of the most endangered waterbird species in the Western Palearctic (HEREDIA et al. 1996; JONES et al. 2008). The historical breeding grounds stretched from northern Norway in a broad belt along the southern tundra zone up to the Taimyr Peninsula and eastwards to Chukotka. Nowadays the western breeding range is highly fragmented (KEAR 2005), and only small isolated breeding groups remain in areas of Scandinavia and Northern Russia still exist (MADSEN et al. 1999).

To stop the negative population trend on the Scandinavian breeding grounds a number of activities was started during the past 30 years: in Norway intensive research on the national breeding population was carried out as well as lots of activities to establish protection on the wintering grounds in Kazakhstan and southern Europe (see AARVAK & TIMONEN 2004). Since 1981, the Swedish breeding population has been reinforced with juvenile birds reared by foster parents (VAN ESSEN 1991, 1996). In Sweden and Finland and more recently in Norway, fledged juveniles were released close to wild living Lesser White-fronted Geese to reinforce local populations (LORENTSEN et al. 1999).

The main wintering areas of Lesser White-fronted Geese are located in Kazakhstan and southern Europe (KEAR 2005). However, since the beginning of the 20<sup>th</sup> century Lesser White-fronted geese were also observed in Germany (MOOIJ & HEINICKE 2008) and The Netherlands as well, but in small numbers (see KOFFIJBERG et al. 2005). According to these studies most of the observed birds were from the Scandinavian breeding population, but Russian breeding birds also might be involved.

However, due to the European Union Birds Directive, Lesser White-fronted Goose as an Appendix I species, requires adequate protection by EU member states independent of their origin. For this reason, the statutory agencies in Lower Saxony are interested in the status of this species and nature conservationists were very concerned, when the Ministry of Agriculture opened a hunting season for Greater White-fronted geese *Anser albifrons* in 2008.

To date there has never been an overview made of Lower Saxonian Lesser White-fronted Goose observations. Here we summarise published observations as well as data from goose counts and the national rarity committee to give an overview about the current status of Lower Saxony as a stop-over or wintering area for Lesser White-fronted Geese. In autumn 2012 we started a three-year project to intensify studies on this rare species on behalf of the German BirdLife partner Naturschutzbund NABU and international partners.

## Methods

This study is based on data from several sources. To determine the numbers and distribution of Lesser White-fronted Geese in Lower Saxony since 1900 the central database of international synchronous waterbird counts carried out monthly since the beginning of the 1970s and contains also results of intensive goose monitoring coordinated by the Staatliche Vogelschutzwarte (NLWKN) during the past 10 years was used as well as reports to national rarity committee and a large number of local ornithological publications like local or regional monographies and avifauna books.

All data were thoroughly checked for reliability by the authors again.

Reports with additional information about habitat, age of the birds, markings or flocking with other goose species were used for further analyses.

Additional information about marked birds was taken from the observer or from the marking project directly.

**Results**

The first record of a Lesser White-fronted Goose was reported in winter 1906/07 (Fig. 1).



In the period 1925–1955, several observations were documented, followed by a longer period without any observations. With the beginning of the Swedish restocking project in the 1980s, the number of records increased.

Then, towards the end of the 1990s, there was a massive increase in number of records and individuals, with a maximum of > 40 individuals per winter season, and up to 8 birds seen on the same day.

This increase seems to be correlated with the start of neck-banding of Greater White-fronted geese, which made observers more enthusiastic to check the flocks intensively.

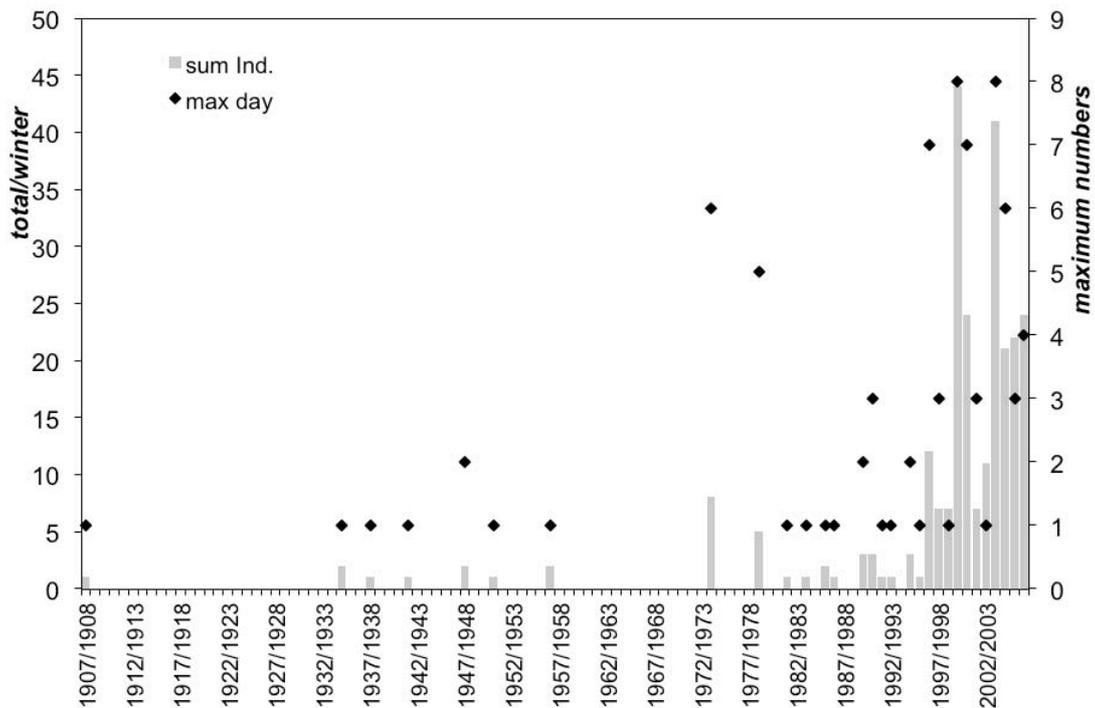


Fig. 1. Totals and daily maximum numbers of Lesser White-fronted Geese recorded in Lower Saxony per winter 1907/08-2006/07 (n = 260).

In most of the important goose staging areas in Lower-Saxony, Lesser White-fronted Geese were reported, but there is a clear hotspot in the northwestern part of the country (Fig. 2). In the Ems-Dollard-area as well as the Leybucht-area the Lesser White-fronted Geese were reported regularly every year, esp. since the late 1990s.



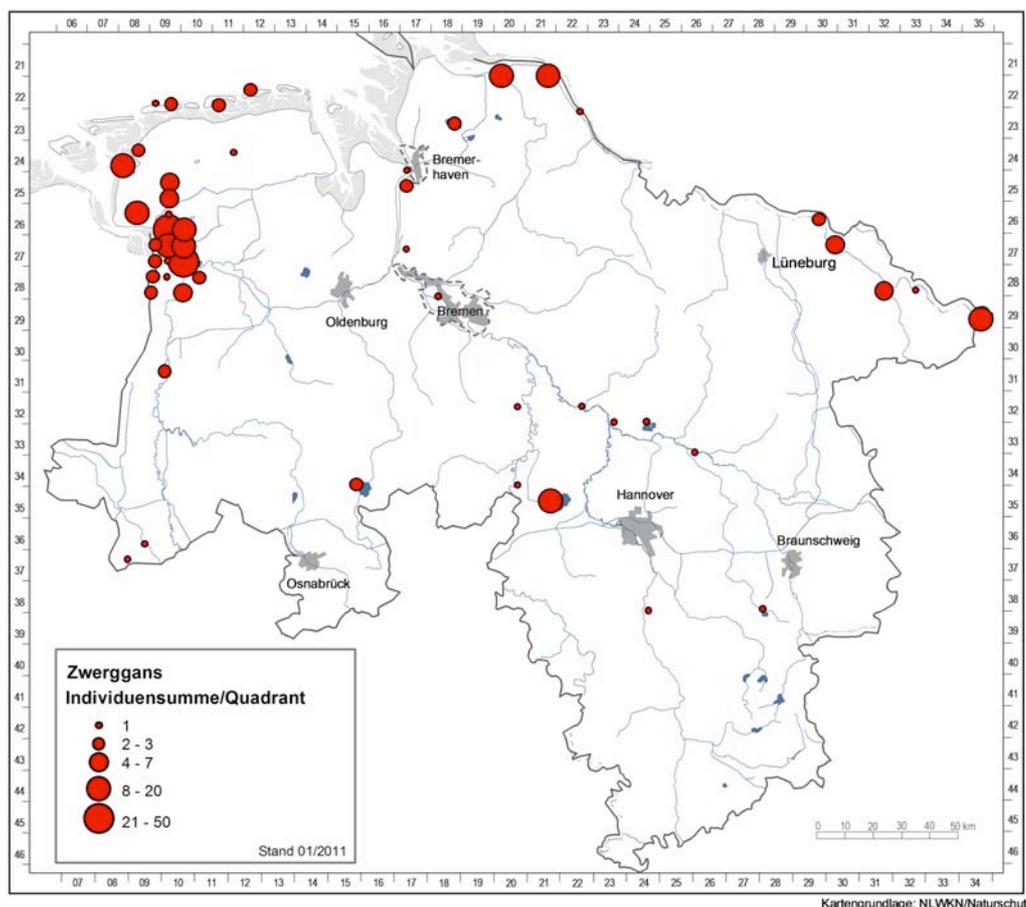


Fig. 2. Spatial distribution of Lesser White-fronted Goose records in Lower Saxony (1907/08-2006/07, n = 260)

Table 1 gives an overview of the sum of individuals recorded in every “goose region” in Lower Saxony as well as the importance of these regions for the species (percentage of records).

Table 1. Total number of Lesser White-fronted Geese recorded per “Goose region” of Lower Saxony (1907/08-2006/07, n = 260)

Goose region	Sum of individuals	% sum of individuals
Dollard and Ems Estuary*	94	45.4
Middle Elbe*	28	13.5
Leybucht and Krummhorn*	27	13.0
Elbe Estuary *	16	7.7
Lake Steinhude	9	4.3
Ems River Valley	7	3.4
Lake Großes Meer	6	2.9
Weser Estuary	6	2.9
Waddensea Islands	5	2.4
Middle Weser	2	1
River Aller Valley	2	1
Others	2	1

\* areas with special goose monitoring programme, see methods

Nearly half of all the observations were made in the Dollard area and Ems estuary (45%), which is situated in the far northwest of the country bordering on The Netherlands. Here, Greater White-fronted and Barnacle Geese *Branta leucopsis* traditionally roost in high numbers. This area is one of the core monitoring areas of Lower Saxony where the geese have been counted weekly since 1996/97. In all, 13.5% of all observations were made in the Middle Elbe area, close to Mecklenburg-Vorpommern and Brandenburg, where Greater White-fronted- and Bean Geese *Anser fabalis* are the dominant species. The Leybucht and Krummhörn (13%) area, in the northwest of the country at the coast of North Sea as well as the Elbe estuary, is situated close to the Wadden Sea, and is heavily used by Greater White-fronted Geese, Barnacle Geese and Dark-bellied Brent Geese *Branta b. bernicla*. Lesser White-fronted Geese can be observed in Lower Saxony during the whole autumn and winter up to May, i.e. the whole period of goose wintering and migration (Fig. 3). Most of observations were reported during goose spring migration beginning normally in January. When all other arctic geese left Lower Saxony in May, the Lesser White-fronted Geese also disappeared.

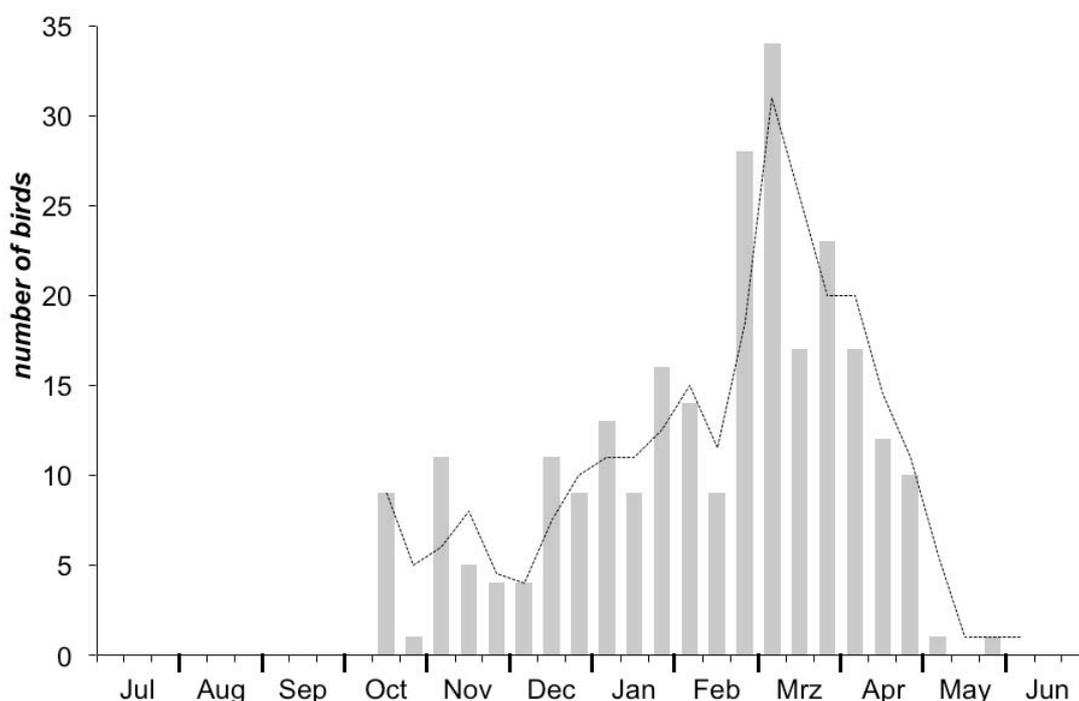


Fig. 3: Seasonal occurrence of Lesser White-fronted Geese in Lower Saxony (totals per thirds of month 1907/08-2006/07, only records with complete date are included, n = 258)

In 139 cases (92.1%) Lesser White-fronted Geese were recorded only on a single day, a longer stay has been reported only twelve times (7.9%, n = 151 records). Eleven records stem from 29 birds, which stayed 2-20 days at one site. The longest residence lasted 27 days.

About 93% of all observations of Lesser White-fronted Geese referred to small flocks of up to three individuals (Fig. 4). In most of the cases only single birds (68.6%) occurred (n = 156 flocks and 261 individuals). Larger groups have been recorded occasionally: 2 x 4 individuals, 3 x 5, 3 x 6, 2 x 7 and 2 x 8. Of these, 141 Lesser White-fronted Geese were determined to be adult birds (86.5%), and only 21 individuals were identified as juveniles (13.5%, n = 163).

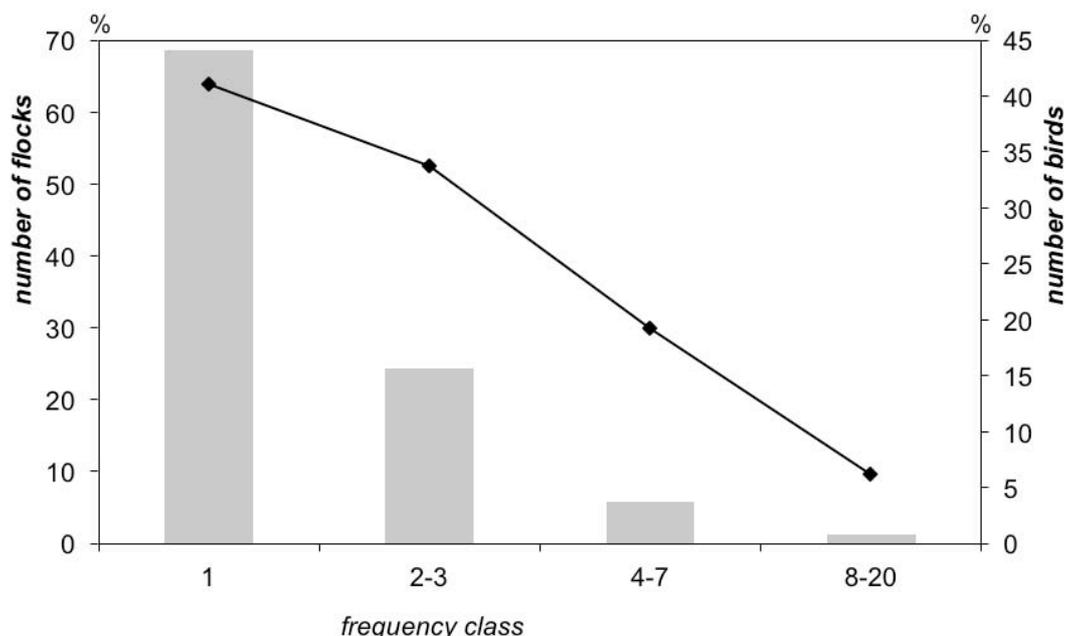


Fig. 4. Flock size of Lesser-Whitefronted Geese in Lower Saxony (n = 133 observations)

In just over three quarters of the cases since the mid-1990s (73%, n = 70 records) Lesser White-fronted Geese were associated with Greater White-fronted Geese, which occurred exclusively or represented, in the case of multi-species flocks, the "main species". In 19% of the records they were with Barnacle Geese, and in 9% with Greylag Geese *A. anser*. In addition to the main species within flocks holding Lesser-White fronted Geese, White-fronted Geese were involved at 52% of all records, Barnacle Goose at 39% and Greylag Goose at 21%.

### Discussion

Lesser White-fronted Geese are a rare but regularly observed species in Germany (MOOIJ & HEINICKE 2008). Traditionally, Lesser White-fronted Geese migrated from their breeding grounds in northern Scandinavia via the Baltic States to Hungary, Bulgaria and Greece, while Russian breeding birds move southwards via Kazakhstan to Greece, Azerbaijan or Iraq (LORENTZEN et al. 1998). Historic publications also reported shot or caught Lesser White-fronted Geese from Germany and The Netherlands (GLUTZ VON BLOTZHEIM & BAUER 1990) long before population re-inforcement in Sweden started. Doubtless historically a few individuals or potentially a small part of Scandinavian or Russian population wintered in Western Europe, but nowadays it has become more prevalent due to the re-inforced Swedish population. On their traditional migration routes, as well as in the wintering areas, the Lesser White-fronted Geese are highly threatened by Greater White-fronted Goose hunting and poaching (JONES et al. 2008). Probably because of the high risk of confusion between Lesser White-fronted and Greater White-fronted Geese, activities to educate hunters and reduce hunting losses failed – especially in Kazakhstan and Russia, but also in Greece marked birds were shot. On the other hand, hunters probably have no real chance to discriminate between Lesser- and Greater White-fronted Geese since hunting on morning and evening flights often takes part in dawn or twilight. Also changes in agriculture at the staging sites and on the wintering grounds at Hungary and Kazakhstan might have had negative effects (KEAR 2005).

Population reinforcement in Sweden was started in 1981 by the Swedish Hunters Organisation (VAN ESSEN 1997, 1999), using Barnacle Geese as foster parents, to show the Lesser White-fronted Geese offspring the way to safer winter quarters. In principle this method succeeded and so the Swedish breeding population increased slowly (ANDERSSON 2011). Because of this, the number of sightings in Germany and The Netherlands increased markedly.

During the 1980s many colour-marked birds were found. They were identified quite easily as Lesser White-fronted Geese because of these colour rings. Over the course of 100 years, several factors have influenced the number of observations, for instance, a) the quality of optics, b) mobility of goose observers and c) the trend towards greater interest in rare bird species.

At least one other factor might be involved: Towards the end of 1990s another important effect emerged and the number of Lesser White-fronted Geese records increased drastically: in cooperation with Alterra WUR institute Wageningen and Dutch Goose catchers we (a goose research group formerly at university of Osnabrück) started to mark Greater White-fronted Geese with black and lime neck collars. Henceforward more and more goose observers started to check goose flocks intensively for collars and rare species like Lesser White-fronted Geese were identified more often (see MOOIJ & HEINICKE 2008).



First-winter Lesser White-fronted Geese in December.

The two goose areas in the northwest of Lower Saxony (Ems-Dollard-Region and Leybucht-Krummhörn) hold more than 50% of all observations of staging Lesser White-fronted geese. 80% of all individuals were seen in the areas where intensive goose monitoring is carried out by the authorities and observer effort is high. Overall the observation density is quite high especially in these areas, so the likelihood of finding rare species accidentally is also high.

In general we expect that especially Swedish Lesser White-fronted Geese migrate via Denmark and Schleswig-Holstein along the coastline to The Netherlands and may roost at Lower Saxony more often in the coastal region close to the Wadden Sea, like the two goose areas in the northwest of Lower-Saxony. Russian and Fennoscandian birds are expected to migrate with other arctic species and can be found at all goose staging sites in small numbers. In the 1990s this was shown by the number of colour-marked individuals: most of them were seen along the coast, mainly during peak migration period of Swedish birds: early October and late spring.

### Future perspective

On behalf of NABU Niedersachsen a three years project was started to nurture knowledge of Lesser White-fronted Goose migration through Lower Saxony.

As part of the scope of this project during main peak of Scandinavian Lesser White-fronted Goose migration (early October and late March) special investigations will be carried out by competent volunteers in 2013 and 2014.

All other goose counters and interested volunteers will be especially trained in recognizing rare goose species in the field.

In cooperation with Dutch and Swedish Lesser White-fronted Goose specialists it is planned to fill in the gaps of knowledge about stopover sites which still exist for this species by using satellite tracking. The main goal is to catch birds on the wintering grounds in The Netherlands as well as on the autumn staging sites at northern Sweden. In northern Lower Saxony a goose catching field station will be setup, using a traditional Frisian goose catching method with especially trained living decoys and clapping nets (“ganzenflapper”, EBBINGE 2000). Here, we will try to train tame captive Lesser White-fronted Geese to optimize the chances catching migrating individuals of this species.



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