

Spring migration of Lesser White-fronted Geese in north-western Europe – an analysis from individual markings

Tomas Aarvak¹, Sami Timonen², Ingar Jostein Øien¹, Petteri Tolvanen³ & Juha Markkola⁴

¹Norwegian Ornithological Society (NOF), Seminarplassen 5, N-7540 Klæbu, NORWAY, e-mails: tomas@birdlife.no, ingar@birdlife.no

²Kosteperänkatu 2 B 12 K, 90100 Oulu, FINLAND, e-mail: sami.timonen@vyh.fi

³WWF Finland, Lintulahdenkatu 10, FIN-00500 Helsinki, FINLAND, e-mail: tolvanen@sl.fi

⁴North Ostrobothnia Regional Environment Centre, P.O. Box 124, FIN-90101 Oulu, FINLAND, e-mail: juha.markkola@vyh.fi

1. Introduction

In 1998, we were able to document that Lesser White-fronted Geese (*Anser erythropus*, later LWfG) utilising spring staging areas in Estonia, Finland and northern Norway were mainly the same individuals. This was achieved by comparing videotapes and belly patch drawings from the Valdak Marshes in spring 1998 with photos and belly patch drawings made during spring 1998 on the Bothnian Bay coast in Finland. Roughly calculated, 75% of the LWfG staging at the Bothnian Bay coast migrated further to the Valdak Marshes. This was also supported by the appearance of the same colour-ringed individual in both areas in spring 1998 (Aarvak et al. 1999). This individual was also observed in Haeska, Matsalu, W Estonia a few days prior to the observation in Finland (Aarvak et al. 1999). In 1999 we extended the use of video equipment to follow individuals and pairs already from the staging area in Estonia to obtain a better understanding of the numbers and structure of the Fennoscandian breeding population.

2. Methods

Øien et al. (1996) describe how the unique pattern of belly patches is used to follow the LWfG population staging at the Valdak Marshes. In Valdak all geese are drawn on ready-made sheets to provide a reliable estimate of the number of LWfG using the area. To create a more accurate archive of the individuals we have started to film the geese by video camera (Sony Handycam) mounted on a telescope (Swarovski AT 80 HD with 20-60 x zoom ocular) at the Valdak Marshes. This combination enables us to videotape the geese at much longer distances than would otherwise be possible with photographic equipment (cf. Aarvak et al. 1999). On the Bothnian Bay coast and in Estonia, a digital video camera (Canon MV10) mounted on a telescope (Leica Apo Televid with 20xW and 20-60 x zoom oculars) was used in the spring 1999. The main purpose was to improve the identification of individuals and pairs and ageing, and finally to reveal migratory movements and life history of individuals by comparing the belly patches on the videotapes from these three staging sites. Two examples of digital video images from the year 1999 (one from the Bothnian Bay coast, recorded in May; and one from Skjåholmen, Varangerfjord, recorded in August) are shown in this report, see pp. 22 and 31.

In Estonia, continuous monitoring was carried out from 23 April to 12 May (Tolvanen et al. 2000, pp. 18–21 in this report), on the Bothnian Bay coast in the period 5 May to 20 May (Timonen 2000, pp. 22–23 in this report) and at the Valdak Marshes in the period 13 May – 6 June (Aarvak & Øien 2000, pp. 24–27 in this report).

3. Results

In total, 13 out of estimated 27 geese were filmed in the Bothnian Bay area. This excludes about half of the geese from the comparison. In Estonia most of the geese were filmed, but due to general low quality of the tapes, only eight pairs and two single males could be readily identified by their belly patch pattern. Out of the 43–51 LWfG seen in Estonia (Tolvanen et al. 2000, pp. 18–21 in this report), six pairs and two males arrived at Valdak. One of the males seemed to be unpaired in Estonia, but at Valdak he was paired with a female

that was colour-ringed at the same site in 1997 (colour leg ring code: White-Black-Red). Whether this male later found a partner along the route or was paired already in Estonia is unknown. One of the pairs divorced at Valdak, but both individuals mated with other mates after two days at the Valdak Marshes. All the six pairs and two single male LWfG that were identified from the video tapes from both Estonia and Valdak, arrived at the Valdak Marshes during the relatively short time span between 19 and 23 May. At the Valdak Marshes, the first LWfG pair was seen 14 May, while the last pair arrived as late as 5 June (Aarvak & Øien 2000, pp. 24–27 in this report). At the Valdak Marshes, 21 pairs out of the estimated total of 25 adult and subadult pairs were filmed. However, in practise all LWfG observed, excluding juveniles, were identified due to exact belly patch drawings.

Only one of these pairs was also positively identified at Säärenperä on the Bothnian Bay coast. In addition to these birds, one more pair seen at the Bothnian Bay coast (Säärenperä) was also seen staging at the Valdak Marshes.

Out of the pairs identified in the Matsalu area, two pairs were not seen at the Valdak Marshes. Similarly four pairs and one single bird of the LWfG identified in the Bothnian Bay area were not seen later at the Valdak marshes, showing that not all pairs migrate to the Valdak Marshes and further to the core breeding area in Norway.

4. Discussion

The videotapes and belly patch drawings collected from Estonia, Finland and Norway in 1999 confirmed the results from 1998, that the LWfG using these areas are mainly the same individuals.

Unfortunately, in Finland it was not possible to obtain high-quality videotape of the filmed individuals, and half of the observed geese could not be filmed at all because the LWfG mostly staged too far from the observers and in the mudflats at Säärenperä.

In addition some methodological problems in Estonia made it impossible to gain reliable data on which birds migrate to the different staging sites in Fennoscandia. Only further work in the coming years will unveil this. At the Valdak Marshes it seems that the LWfG arrive via two different routes, because a bimodal distribution of LWfG numbers can be seen in some of the years where monitoring has been conducted at the Valdak marshes (see Aarvak & Øien 2000, pp. 24–27 in this report; Aarvak & Øien unpublished data). The lack of this bimodal distribution does, however, not preclude the existence of a population with mixed migratory behaviour. A more detailed analysis of the material and observations of colour ringed individuals are necessary.

Since the LWfG positively identified in Estonia this spring arrived at the Valdak Marshes during a relatively short time period in May, we suggest that there might be two sub-groups of LWfG using the Valdak Marshes almost simultaneously. Results obtained by the use of satellite transmitters have shown that there are in fact two different migration routes during autumn (see Lorentsen et al. 1997), but whether these birds return along a common spring migration route is at present unknown.



Photo. Ingar Jostein Øien recording geese on video tape using a video camera mounted on a telescope. © Petteri Tolvanen, 1999

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References

- Aarvak, T. & Øien, I.J. 2000:** Monitoring of staging Lesser White-fronted Geese at the Valdak Marshes in 1999. In: Tolvanen, P., Øien, I. J. & Ruokolainen, K. (eds.): Fennoscandian Lesser White-fronted Goose conservation project. Annual report 1999. – WWF Finland Report 12 & Norwegian Ornithological Society, NOF Rapportserie Report no 1-2000:24–27.
- Aarvak, T., Øien, I.J., Tolvanen, P. & Markkola, J. 1999:** Two pieces of the spring migration puzzle of the Fennoscandian Lesser White-fronted Goose population in place. In: Tolvanen, P., Øien, I. J. & Ruokolainen, K. (eds.): Fennoscandian Lesser White-fronted Goose conservation project. Annual report 1998. WWF Finland Report 10 & Norwegian Ornithological Society, NOF Rapportserie Report no. 1-1999:27–30.
- Lorentsen, S.-H., Øien, I.J. & Aarvak, T. 1998:** Migration of Fennoscandian Lesser White-fronted Geese *Anser erythropus* mapped by satellite telemetry. – *Biological Conservation* 84:47–52.
- Øien, I.J., Aarvak, T., Lorentsen, S.-H. & Bangjord, G. 1996:** Use of individual differences in belly patches in population monitoring of Lesser White-fronted Goose *Anser erythropus* at a staging ground. – *Fauna norvegica Series C, Cinclus* 19:69–76.
- Timonen, S. 2000:** The spring migration of the Lesser White-fronted Goose at the Bothnian Bay in 1999. In: Tolvanen, P., Øien, I. J. & Ruokolainen, K. (eds.): Fennoscandian Lesser White-fronted Goose conservation project. Annual report 1999. – WWF Finland Report 12 & Norwegian Ornithological Society, NOF Rapportserie Report no 1-2000:22–23.
- Tolvanen, P., Karvonen, R., Pynnönen, P. & Leito, A. 2000:** Monitoring of Lesser White-fronted Geese in western Estonia in 1999. In: Tolvanen, P., Øien, I. J. & Ruokolainen, K. (eds.): Fennoscandian Lesser White-fronted Goose conservation project. Annual report 1999. – WWF Finland Report 12 & Norwegian Ornithological Society, NOF Rapportserie Report No 1-2000:18–21.