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Reintroduction of the Lesser White-fronted Goose Anser erythropus in Fennoscandia with the help of microlight aircraft

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The Lesser White-fronted Goose Anser erythropus is a monotypic species that formerly had a continuous distribution in the southern tundra between Lapland and Chukotka. Since the first population estimates of the 1950s, a drastic decrease in numbers was recorded from more than 100 000 to fewer than 27 000 birds in the 1990s. During the 1930s flocks of c. 50 000 Lesser Whitefronts were regularly recorded in the Western Palaearctic. During the 1950s the Western Palaearctic population was still observed at more than 50 000 birds, but in the 1990s numbers recorded in this region during midwinter counts never exceeded 10 000 – 13 000.

Population numbers have decreased about 5% annually since the 1980’s on most regularly monitored sites, and at present the wild Fennoscandian subpopulation is close to extinction. The reasons for this decline are changing conditions in stop-over and wintering sites, as well as hunting along migration routes in spite of the fact that hunting of the species is not permitted in most countries. The Lesser White-fronted Goose is included in Appendix 1 of the Bonn Convention, in Appendix II of the Bern Convention and in Annex I of the EC Directive on the Conservation of Wild birds. However, hunting of the quite similar looking Greater White-fronted Goose Anser albifrons causes high mortality of Lesser White-fronted Geese. Complete abandonment of hunting would be the best protection measure, but for at present this is not feasible.

The late Dr. Lambart von Essen started a re-introduction programme in Sweden in 1981. He avoided the main threats by creating a new safe migration route to safe wintering grounds using semi-domestic Barnacle Geese Branta leucopsis as foster parents for Lesser White-fronted goslings, which in this way learned to migrate to safe wintering grounds in Western Europe. With this programme von Essen showed that geese are imprinted on the area where they learned to fly and that young geese must be guided by their parents to the winter quarters. The Swedish re-introduction project founded the only expanding Lesser White-fronted Geese population worldwide. Today it consists of about 100-150 birds, all migrating to the Netherlands to winter. Although this project has been very successful, there are some genetic problems. Since 1991, a number of hybrids between Barnacle and Lesser-White fronted Geese were recorded in the range of the Swedish introduction scheme (Anderson & Larsson 2006).

The method of using microlight aircraft as foster parents was developed a decade ago by Bill Lishman. Today it is an approved method used in Northern America, Europe and Asia, and already adopted for several endangered bird species, e.g. Whooping Crane Grus americana, Trumpeter Swan Cygnus buccinator, Bald Ibis Geronticus eremita and Siberian Crane Grus leucogeranus.

Aktion Zwerggans and its Swedish and Finnish partners intend to re-introduce Lesser White-fronted Geese in Fennoscandia by means of the microlight method. Within a period of four years, it is planned to guide a total of about 400 genetically ‘clean’ Lesser White-fronted Geese from the former breeding areas in Fennoscandia along a western migratory route from Finnish Lapland via Sweden and Denmark to western Germany. In the selected wintering site wild Lesser White-fronts are observed wintering every year. Along the planned migratory route hunting of Greater White-fronted Geese is forbidden. A test flight in 1999 showed that the microlight method has high survival rates comparable to the Swedish Barnacle Goose method. Changing traditional migratory routes and wintering areas is not uncommon in wild goose species (for example Greater White-fronted Goose and Red-breasted Goose Branta ruficollis (Dereliev 2006) in the second half of the 20th century).

The microlight method seems to be very promising and, together with the Barnacle Geese foster parent method already used by the Swedish re-introduction project, will hopefully save the Fennoscandian Lesser White-fronted Geese from extinction. In addition, the re-introduction of young Lesser White-fronted Geese by microlight aircraft would exclude the risk of hybridisation with Barnacle Geese. Several conclusions may be drawn from this:

- In spite of all past measures, the local Fennoscandian subpopulation is decreasing by about 5% annually and will be halved in about 10 years. According to modern population genetics the critical size for small isolated populations is likely to be a few hundred individuals (Baker 2006). At present the population size is clearly below this level and the population has little chance to recover again without a strong input of new genetic material.
- Re-enforcement of the Fennoscandian subpopulation by ‘genetic upgrading’ through the re-introduction of Lesser White-fronted Geese from other breeding lines could help restore the viability of the population.
- The re-introduction of artificially bred Lesser White-fronted Geese of non-hybrid origin may be helpful in saving the Fennoscandian subpopulation from extinction.
- Re-introduced Lesser White-fronted Geese should be forced to adopt alternative migratory routes in a part of the range with low hunting pressure to reduce mortality rates.
• The Swedish method of re-introducing Lesser White-fronted Geese with the help of Barnacle Geese as foster parents is successful but carries a high risk of hybridisation between the two species. The re-introduction of young Lesser White-fronted Geese with the help of microlight aircraft has proved to be as successful as the Swedish method but excludes the risk of hybridisation.

REFERENCES