SWEDISH ENVIRONMENTAL PROTECTION AGENCY

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MEMO
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Genetic analysis of captive Lesser White-fronted Geese in Germany

Dear Mr Lenten,
We are grateful for the opportunity to give our comments on the paper by Pedall et al.(2008). The Swedish Environmental Protection Agency (SEPA) has the following comments;

Generally, SEPA considers the sample sizes as being to small, especially regarding the mtDNA-analysis and its statistical treatment. It would be valuable to analyse the statistical implication of analysing 87 of the total number of German captive Lesser White-fronted Goose (LWfG).

SEPA finds the conclusions of the paper confusing.
In the first part of the article, the mtDNA-test reveals that the haplotype of the larger part of the captive German LWfG is similar to wild Greater White-fronted Goose (GWfG) ("Lineage I"). Within "Lineage I" the Russian LWfG individuals have a separate haplotype. "Lineage II" seems to consist of haplotypes which are "private" to LWfG.
Several individuals from each original group have not been included in the mtDNA analysis (20% of the German LWfG). This does not seem to be followed up in the article. The number of wild GWfG in the mtDNA analysis is 57, although the original number was only 38.

The following microsatellite analysis with assignment test revealed that 8 out of the original German geese have strange DNA and are suggested to be erased. The assignment test was made without the mtDNA data. Pedall et al (2008) draws the final conclusion that all except for the above mentioned 8 specimen would represent an excellent base for a breeding and reintroduction program. SEPA draws the following conclusion; If we assume that the 8 individuals with strange DNA belonged to "Lineage I", then 34 (43%) specimen from this lineage would remain which has mtDNA in common with wild GWfG. SEPA does not

consider that this part constitutes a good base for breeding and supplementing in the field.

SEPA would also like to point out that captive bred specimen (that have been so for several generations) may not be well suited for supplementations into the wild because of the possible genetic and/or behavioural adaptations to captivity both at individual and population level.

In conclusion, SEPA does not find the conclusions in the paper of Pedall et al. (2008) convincing and thus would not like to change the agreement of using only offspring of wild caught Russian specimen for the project in Aktion Zwerggans as well as in our national work for conservation of the species. SEPA considers the pilot project of Aktion Zwerggans to be of vital importance in order to hopefully establish a safer migrating route for the Lesser White-fronted Goose. This would also be a good way to distribute the investments of the work with breeding and supplementing, not jeopardize all material on the migration route to the wintering grounds of Kazakhstan and Greece, where poaching still is a significant threat and most likely will be so for a long time period.

On behalf of the Swedish Environmental Protection Agency,

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