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NEW ACTION PLAN FOR THE LESSER WHITE-FRONTED GOOSE, *ANSER ERYTHROPUS*: ISSUES UNRESOLVED FOR WHICH ADVICE IS BEING ASKED FROM THE SCIENTIFIC COUNCIL OF THE BONN CONVENTION

Introduction and background

The Lesser White-fronted Goose *Anser erythropus* is one the smallest of the 'true geese' in the genera *Anser* and *Branta*. The species is globally threatened, being recognised as Vulnerable by IUCN – The World Conservation Union (IUCN, 2004), and ranked by BirdLife International as 'SPEC 1' within Europe, denoting a European species of global conservation concern (BirdLife International, 2004). It is listed on Annex 1 of the European Union Birds Directive (79/409/EEC), in Appendix I and II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), in Column A of the Action Plan under the African-Eurasian Migratory Waterbird Agreement (AEWA) and in Annex II 'Strictly protected species' of the Bern Convention.

Lesser White-fronted Geese are long-distance Palearctic migrants, currently breeding discontinuously in the sub-arctic zone from northern Fennoscandia to eastern Siberia. The wintering/staging areas and migration routes are only partially known (see map in draft Action Plan).

Four subpopulations can be recognised, three of which are considered to be surviving components of the species' formerly more extensive breeding range. The fourth subpopulation, in Sweden, has been developed by the release of captive-bred birds and establishment of a human-modified flyway to the Netherlands. The three wild subpopulations have all shown dramatic declines in recent decades and continue to decrease rapidly, due primarily to hunting pressure and habitat loss. The reintroduced Swedish population is increasing slowly and shows high adult survival rates, but expert views differ markedly in relation to the ethical and particularly scientific merits of captive breeding, reintroduction and flyway manipulation as conservation tools.

The 1996 International Action Plan prepared for BirdLife International on behalf of the European Commission (Madsen 1996) is outdated. Under the auspices of AEWA a revision process has started on a contractual basis with BirdLife International in co-operation with some independent experts (Mr. Tim Jones and Dr. Gerard C. Boere).

It was known that within the group of experts involved in the activities related to the conservation of the species, strong differences in view exist on various activities planned to be undertaken in the near future. These differences concern in particular the genetic aspects of captive and released birds, further modifying flyways and further re-stocking and re-introduction of birds and are geographically in fact restricted to the wild Fennoscandian subpopulation and reintroduced Swedish subpopulation.

International meetings focusing on the conservation of the species have been held regularly, most recently in Odessa, Ukraine (March 2004), Edinburgh, UK (April 2004) and most importantly the recent meeting in Lammi, Finland (April 2005) with all relevant people present (over 50 participants). The technical presentations and discussions at these meetings have been drawn on in preparing the new draft Action Plan.

The discussions in Lammi made clear that probably no consensus can be reached on some important issues to be dealt with in the new Action Plan. Also the amount of comments by the Lammi workshop participants on the new draft Action Plan, circulated soon after the workshop, did not lead to a consensus position on most of the controversial issues in relation to specifically the Fennoscandian population.

To avoid misunderstanding it must be stated that there is a very high degree of consensus on the causes of the decline and it is the wide spread unsustainable (and often illegal) hunting during migration and in the wintering areas that is the most critical threat factor. This was the main reason for the Swedish initiative in the eighties (Mr. Lambert von Essen c.s.) to establish a new safe flyway to Western Europe, notably the Netherlands; where the species is not hunted during migration and wintering.

At the Lammi workshop, (Finland, 1-2 April 2005), at the suggestion by BirdLife c.s., participants agreed to request the opinion of the Scientific Council of the Bonn Convention on these controversial issues and seriously take into account the advice of the Scientific Council in guiding their future actions.

The Scientific Council has previously been involved in the matter during its session in September 2002 in Germany, on the basis of an overview report from WCMC and oral presentations. Pending the advice of the Scientific Council, the Action Plan has not been finalised but the issues on which no consensus could be reached have been placed in square brackets.

With this cover note formulating the precise questions, we also submit the new draft Action Plan which includes further comments and information from the participants of the Lammi workshop as appropriate and a number of publications and scientific papers focussing on the controversial issues.

An interesting element in the discussion is a recent ruling by the Council of State of the Netherlands (which includes the Highest Administrative Court; their ruling is binding for everybody including the Government) of March and December 2004, obliging the Dutch Minister of Agriculture, Nature and Food Quality to issue a study for the establishment of Natura 2000 sites for the Swedish re-introduced population which winters in the Netherlands. The Council of State considers the birds as Lesser White-fronted Geese and sees their protection as part of the binding EU Bird Directive, regardless of their origin or genetic profile of which the Council of State was aware. Their ruling is also based on a case decided by the EU Court in Luxembourg as is clear from the following citation:

“It follows from the case law of the Court referred to above that Article 4(1) of the Birds Directive does not allow the Member States to make a policy decision to the effect that no Special Protection Areas should be designated for the lesser white-fronted goose. That provision does not allow for a distinction to be made according to the level of genetic purity of the birds concerned. Nor can the alteration by human intervention of the migratory route of the lesser white-fronted goose constitute a reason not to designate an SPA for that species”.

However, they did not consider the possible implications of genetic contamination of the reintroduced population. It is there were the advice of the Scientific Council could also be helpful.

The synthesis report on the Lesser White fronted Goose as prepared for the Scientific Council of the Convention on Migratory Species (UNEP/WCMC 2002/final version 2003) is still a valuable background document. An extremely well documented internet portal www.piskulka.net provides regularly updated news, links and literature references (with down-loadable PDF files) for all matters concerning Lesser White-fronted Geese.

Specific issues and questions

Background

Genetic studies have shown that some individuals within the captive breeding populations used for the Finnish and Swedish reintroduction/restocking programmes are carrying DNA of other goose species, notably Greater White-fronted Goose but probably also Greylag Goose. It is concluded that this arose through hybridisation in captivity as so far no introgression has been found in the wild population. There is a risk that released birds in Sweden, carrying DNA from other goose species could pair and breed with birds from the wild Fennoscandian population and that, given the Fennoscandian and Central Asian populations partially overlap outside the breeding season, contamination of the Central Asian birds could also occur. There is not a full consensus among Lesser White-fronted Goose stakeholders concerning the significance of this risk in practice. Nevertheless, further releases in Sweden of captive-bred birds are formally suspended since 1999 (though a few Lesser White front's were released in Finland in 2004). The expert workshop held in Lammi, Finland in March/April 2005, agreed that any future releases, if at all, should only be based on a genetically 'clean' new stock derived from birds from the wild.

The Swedish authorities are currently negotiating with Russian counterparts to try to obtain wild birds to build up a new captive-bred population from which future releases can be made. Plans exist also in Germany on a similar project, including birds already held in captivity.

Some experts believe that the established free-flying, reintroduced Swedish population (reproducing now without any human interference) should be caught and taken back into captivity or eliminated in full. There is no consensus on this point and the Swedish authorities among others, argue that the free-flying reintroduced population should be maintained. This position is reinforced by a recent decision of the Council of State's High Administrative Court in The Netherlands, ruling that a survey should be undertaken to establish Special Protection Areas for wintering birds from the reintroduced Swedish population (see details in your documentation).

The IUCN Guidelines for Reintroductions, issued in 1995 by the IUCN Species Survival Commission (SSC), have no formal legal status but are generally regarded as the most authoritative internationally published guidance on species reintroductions. While conformity with the IUCN Guidelines has often been cited by both proponents and opponents of Lesser White-fronted Goose reintroduction initiatives, the guidance actually doesn't extend to the more controversial aspects of the Lesser White-front programmes, namely the possible intro-regression of alien DNA into the wild population and modification of flyways.

The guidelines provide guidance on genetic issues in general:

- *“An assessment should be made of the taxonomic status of individuals to be re-introduced. They should preferably be of the same subspecies or race as those which were extirpated, unless adequate numbers are not available. An investigation of historical information about the loss and fate of individuals from the re-introduction area, as well as molecular genetic studies, should be undertaken in case of doubt as to individuals' taxonomic status. A study of genetic variation within and between populations of this and related taxa can also be helpful. Special care is needed when the population has long been extinct”*
- *Choice of release site and type: Site should be within the historic range of the species. For an initial re-enforcement there should be few remnant wild individuals. For a re-introduction, there should be no remnant population to prevent disease spread, social disruption and introduction of alien genes.*
- *“ It is desirable that source animals come from wild populations. If there is a choice of wild populations to supply founder stock for translocation, the source population should ideally be closely related genetically to the original native stock and show similar ecological characteristics (morphology, physiology, behaviour, habitat preference) to the original sub-population. (4th bullet point.). If captive or artificially propagated stock is to be used, it must be from a population which has been soundly managed both demographically and genetically, according to the principles of contemporary conservation biology”.*

However the underlying case may be already too complicated to easily follow the guidelines. To mention:

- the wild population is now almost extinct in Finland and Sweden.
- the remaining Norwegian population is extremely small and almost certainly too small to be the basis of a new captive stock.
- There is already a free-living population from a previous re-introduction (re-stocking may be if some wild birds may have still been around in Sweden) with genetic material causing concern on the one hand (pollution with genes from GWfG) but containing at the same time to a very large extend the original genetic material from the Fennoscandian population.

The activities under discussion relate directly to the following countries: Finland, Netherlands, Norway, Russian Federation (most likely source of any future wild-caught breeding stock), Sweden and Germany.

Key issues, options and alternatives to be decided on for the new Action Plan

There are three key issues on which expert opinion is currently divided. Under each heading, three/four possible questions/options/alternatives are presented related to these key issues. For each of them these roughly equate to (i) continuation with little or no change from the situation prior to the voluntary moratorium on releases; (ii) continuation subject to implementation of additional safeguards; (iii) permanent suspension.

Captive breeding options and alternatives

- Captive-breeding and reintroduction/restocking resumes, using the existing stocks in Finland and Sweden which have been tested on their genetic origin to avoid releasing birds with alien genes. This is challenged by some genetic experts mentioning that nuclear DNA from other species cannot be detected. Germany has not yet started its planned captive breeding program but there are many birds in captivity.
- Captive-breeding continues in a new way, but using only genetically 'pure' birds derived from wild-caught stock (adults young, eggs). Given the size of the existing wild population in Fennoscandia the birds for this programme have to be taken from the Russian populations. No decision has been taken who would be responsible, where it should take place and who pays for the costs.
- Reintroduction takes only place when the Fennoscandian population is gone extinct. A problem might be: who determines that moment given remoteness of the breeding areas and uncertainties of the presence of scattered wild breeding pairs in Sweden and Finland. No re-stocking as long as there are wild birds left in Fennoscandia.
- Captive-breeding and reintroduction/restocking is permanently suspended; also when the Fennoscandian population goes extinct.

Free-flying reintroduced population options and alternatives

- The existing reintroduced Swedish/Dutch population continues to be free-flying, and is allowed to evolve without further human intervention; but see the problem formulated below on a possible interbreeding with the existing very small wild Fennoscandian, presently mainly Norwegian, population.
- Possible additional releases from present captives stocks, only if released birds are proven to be genetically 'clean'. This is challenged as a possibility for reasons that alien genes in nuclear-DNA cannot be detected.
- Possible additional releases, only if released birds are genetically 'clean' and come from the new breeding stock derived from wild birds; this approach will take at least 5-8 years (not to mention costs involved..!) and as a consequence the moratorium for releases from the present stocks should continue.
- The existing reintroduced Swedish/Dutch population is captured, individuals are genetically screened and any birds deemed likely to pose a risk of introgression of alien DNA into the wild population are removed; the remaining birds are released again (though some genetics experts insist that the best-available technology still does not provide 100% guarantee that all genetically 'contaminated' birds can be identified).
- The existing reintroduced Swedish/Dutch population is removed from the wild in its entirety to avoid any risk on genetic aspects to the existing small wild population.

Flyway modifications options and alternatives

- Initiatives for the creation of new human-modified ‘safe’ flyways continue exactly as at present. This concerns the present Swedish population and plans for an additional flyway from northern Sweden/Finland to Germany, using ultra-light aircraft techniques to guide the birds. Finland, Norway and Sweden have so far rejected to support the German plans using ultra lights in the light of the present discussions on genetics etc. Sweden has, on the longer term, no objections however only from the point of view of the principle as such and is not against a pilot project; provided other countries along this route agree as well. The proposed new wintering area, the Lower Rhine Delta, is not regularly used by wild Lesser White-fronts, though the species stages annually in small numbers in the eastern part of the country.
- Initiatives for the creation of new human-modified ‘safe’ flyways continue, subject to the implementation of additional measures advised by the Bonn Scientific Council.
- Initiatives for the creation of additional flyways are completely abandoned.

Specific questions for the Scientific Council of the Bonn Convention

The above describes the various options and alternatives possible, presently most relevant for the Fennoscandian population but population elsewhere decline as well and may be faced in the near future with similar problems and discussions.

Below a number of more generic and fundamental questions which in fact needs to be answered before choices can be made from the option’s and alternatives for the three main issues under debate.

- Does each of the existing and planned reintroduction/restocking and flyway modification initiatives for Lesser White-fronted Goose fully implement current international best-practice standards and guidelines? Is there experience elsewhere in the world on similar cases?
- Although carriers of alien genes were screened in present captive stocks using best available techniques and scientific methods, some genetic experts argue that only female carriers can be identified through mtDNA analysis but carrier males not. What further measures are needed to certainly exclude carriers of alien genes from breeding stocks?
- Does the presence of genetic material from other goose species in the present captive-breeding stock, if still present in spite of the above cleaning process, represent a tangible threat to wild Lesser White-fronted Geese if birds are released and in what sense? If so, what measures must be taken?
- Does the highly likely presence of genetic material from other goose species in the present free-flying reintroduced population represent a tangible threat to wild Lesser White-fronted Geese? If so, what measures must be taken additional to the fact that no other birds have been released since 1999 and that the present population of about 100 birds wintering in the Netherlands, contains already birds born in the wild? This issue is a particular concern of the Norwegian Government that the remaining very small wild population may interbreed with the Swedish free flying population which probably still contains a number of birds with alien genes.

- Could reintroduction/restocking and flyway modification continue in the future as an integral element of the international conservation Action Plan for Lesser White-fronted Goose in particular as a pre-cautionary conservation measure for the almost extinct Fennoscandian population? This only under the condition that all released birds are from a captive stock newly set up with birds taken from the wild and with the appropriate taxonomic status.
- If flyway modification continues what methods should be preferred: foster parents (as used in the Swedish project) or ultra-light airplanes as used e.g. in the USA and proposed for the German initiative?
- What is the opinion of the Scientific Council on the genetic consequences of restocking with birds from the western Russian population? Does the Fennoscandian population represent a unique genetic characteristics or the difference in haplotype is only the result of recent isolation? Does the restocking with birds from Russia present any tangible risk to the existing population, notably the small Norwegian breeding population? Should it wait until the existing population goes extinct?