

5.7 Ethical considerations, animal welfare and the importance of the family unit in geese

Earlier releases in Sweden (between 1981 and 1999) of Lesser White-fronted Geese raised in captivity used Barnacle Geese as foster parents. The problems arising from the use of other goose species as foster parents are discussed in detail in **chapter 5.2.6**. Due to the problems associated with the use of Barnacle Geese as foster parents, birds introduced from 2010 onwards have been released without foster parents (Andersson & Holmqvist 2011, Liljebäck et al. 2012, 2013). However, they have been released without parents at all, which has led to other problems (see **chapters 5.2.4** and **5.2.5** for detailed descriptions).

The most important functional unit for all goose species is the family unit, not least in the early stages of life (Black & Owen 1984). It is as part of a family that goslings learn to acquire skills which are essential to their future survival.

Young geese learn social and foraging skills from their parents. Goslings reared in captivity without parents are lower in the dominance hierarchy compared to geese reared by parents, and this was illustrated in experiments using captive Barnacle Geese (Black & Owen 1987). Orphaned goslings are attacked more frequently, feed almost continually and attain a poorer body condition than those goslings in families (Black & Owen 1984, 1989a, b). Orphaned geese have the lowest status in the social rank within a goose flock. Single orphans have the lowest status of all, only superseded in the hierarchy by orphans in loose groups. Orphans may adopt one or more of several strategies during their first winter (*i*) remain alone (so-called single orphan or single juvenile), (*ii*) form a group together with one or more other orphans (so-called group orphans), or (*iii*) attempt to join a family (so-called tagging behaviour). Such tagging behaviour appears to rarely be successful, and it appears that an orphan is rarely (if ever) successful in being accepted into a family (apart from in the very early stages of life), and they are more likely to attempt to form temporary liaisons with several different families in the space of a winter (Paul Shimmings, unpublished observations based upon direct observations on colour-ringed Barnacle Geese in the wild). The fact that single juveniles were not accepted into families except that when they were very young goslings has been demonstrated in other studies (Glasgow 1977).

Goslings gain benefits in being within families, as they can spend less time being vigilant, more time feeding and will subsequently be in a better condition (Siriwardena & Black 1998). Being in better condition leads to improved survival. In adult life, birds in better condition are more likely to be successful breeders. Being within a family also allows access to better foraging opportunities as families feed on the edge of flocks and get to the best food first (Black et al. 1992)

In a study of the importance of the family unit in Barnacle Geese, Black & Owen (1984) found that orphaned goslings were rejected when they attempted to join a family, suggesting that the optimum brood size in winter was not necessarily the largest and there was no advantage in recruiting extra (family) group members. This means that it is very unlikely that Lesser White-fronted Geese released into the wild without accompanying parents will be successful in finding an adoptive family, where they might then have been able to learn important skills. Such goslings must then either feed for themselves, or else form loose groups together with other conspecifics.

The releases of birds without (foster) parents in Sweden are open to discussion as regards the ethical issues this poses towards the birds that are released. Goslings have been released without other flock members/family members with experience to show them where to go during migration. Without parents, some goslings are unable to find their way along the migration route, and may

become lost, if they even survive to undertake the autumn migration. Such individual, inexperienced geese are therefore likely to choose a route which has not normally been used by conspecifics in the past. There is good evidence to support this presumption as individuals released in Sweden from 2010 onwards have dispersed in all directions away from the release site. Several individuals appeared in Norway in autumn 2014, and were still wintering in the country in December of that same year. Niklas Liljebäck, the project leader of *Projekt Fjällgås* wrote in e-mail as a comment to comments on pictures of the birds in Norway (in the Norwegian Species Reporting System, Artosbservasjoner): *“2014 was a bad breeding year for LWfG in Sweden and as you know the population is small. So the released birds had problems to find wild conspecifics to follow. Now some of these birds are following other goose species- we have reports of that they follows Greylags in Norway but in Sweden they seems to prefer Bean Goose.”*

Not only do young birds benefit from associating with their parents, but the adult birds are also likely to benefit from associations with their offspring. Black & Owen (1989a) found that an association with goslings may increase a parent’s chances of future breeding. Goslings can also contribute to the survival of other family members by helping with vigilance and in chasing off intruding geese. Parent birds that allow young to remain within the family for longer periods gain an advantage in being able to feed for longer bouts whilst other members of the family are vigilant.

As part of a programme to save the Hawaiian Goose *Branta sandvicensis* from extinction, over 2,000 captive-reared birds were released into the wild, mainly in groups comprising goslings only. Marshall & Black (1992) found several behavioural differences between parent-reared goslings and those raised without parents. The most significant finds were that goslings reared with parents were dominant over goslings reared without parents, and that parent-reared goslings avoided predators, whereas goslings without parents approached a potential predator. The authors suggest that goslings reared with parents are better able to cope when released into the wild. Goslings reared without parents tended also to be less vigilant. Vigilance is an important part of parental investment (Lazarus & Inglis 1978, Black & Owen 1989a). If goslings reared without parents are less vigilant then they are likely to be at risk from predation, and will also become poorer parents as they have not acquired skills necessary to protect both themselves, their mate, nest, eggs or goslings. Without the presence of adults, the goslings are unable to learn social and feeding skills from adult (parent) birds (Marshall & Black 1992).

To summarise the release programme for Hawaiian Geese, Marshall & Black (1992) wrote the following *“Reintroductions that have failed have frequently involved releases of inexperienced captive-bred birds (Fyfe 1978, Wittemann & Pimm 1991). Reintroduction is an expensive and labour-intensive procedure (Cade 1986, Kleiman 1989). It is vital that resources are capitalized on by only releasing birds which are able to cope with conditions in the wild”*.

Further, Marshall & Black (1992) recommend that *“In future, managers should provide goslings with as much “parental experience” as possible in order to equip them with appropriate skills to cope once released in the wild”*. Twenty years later, well-meaning managers continue to release birds with little or no “parental experience” whatsoever, as illustrated by the release of geese that have been removed from their parents at an early stage, prior to them attaining their first (juvenile) plumage. This raises a question about the ethics of releasing Lesser White-fronted Geese into the wild without the accompaniment of their own parents. In this context, we would suggest that the release of captive-reared Lesser White-fronted Goose goslings is an option likely to fail as the birds are unlikely to be in an optimal condition to cope with conditions in the wild. Such geese have not learned all of the necessary life-skills in order to cope in an environment in which they are unfamiliar. Nor have such geese the ability to learn from their cohorts, as these have been reared in an identical way and have not acquired all the skills, which could be shared with other flock members such that they learn.

In some years, the Swedish reintroduction project have released mainly (or possibly even only) males. The reason behind this is as follows (directly translated from *Projekt Fjällgås* report for the 2013 season): “*We made a decision to release 8 young males (4 first calendar-year and 4 second calendar-year) from Nordens Ark in the hope that they will join up with the breeding geese and follow them on migration. Once they select a partner during the winter/spring then we hope that they follow the female to the mountains and nest there. Male geese normally show a lower level of unfaithfulness compared to females and it is the female that leads the male to the breeding area*”. The current Swedish project has (in some years at least) released predominately young male geese. These are likely to disperse in widely different directions after release as has been proven by tracking of satellite-tagged Lesser White-fronted Geese. These birds are also less likely to return to the natal area. The return rate between summer 2010 and spring 2011 was 14 of 17 individuals (Andersson & Holmqvist 2011). The disappearance of three birds between autumn 2010 and 2011 was assumed to be as a result that these three birds were dead. Yet 16 of these were recorded in the Netherlands, so it is equally likely that these birds did not return to the natal area. This is a typical trait observed in male geese. Male geese that are allowed to wander in this way in search of a mate can travel widely, as has been shown from observations of birds released in Sweden. The risk of male geese released in Sweden turning up in the Fennoscandian population is today considered to be very high indeed, while also straying females from the recent releases also can turn up basically anywhere. Two individuals, of which at least one female, have already turned up at the important staging area for the wild Fennoscandian population at Valdak Marshes, one in spring 2015, the other in autumn that same year.

In studies of nest philopatry, it has been shown that it is the female goose that determines where a pair will settle to breed, and that females exhibit a high degree of site faithfulness. Young male geese have a higher dispersal rate than females, and female geese have a higher level of nest philopatry than male geese. Female geese have a much greater philopatry to the natal area (i.e. the original birth site) than male geese (Cooke et al. 1975, Lessels 1985, Loonen et al. 1998, Prop et al. 1984, van der Jeugd & Larsson 1999, van der Jeugd et al. 2002). Release of male Lesser White-fronted Geese into the wild in Sweden is likely to lead to dispersal rather than to birds returning to the natal area, such as has been shown for other goose species (Nilsson & Persson 2001).

Survival of the released birds is low. In 2013, only one of the original 17 LWFG released in 2010 was observed in the wild, two of the 35 from releases in 2011, and 3 of the 28 released in 2012 (Liljebäck et al. 2013).

Releasing an overabundance of a single sex into the wild leads to an imbalance in the proportion of a given sex within a population. By releasing mainly male geese into a population where the proportion of males to females is assumed equal, then there will be an overweight of males (**Figure 49**). In 2011, all birds released in Sweden were males (Andersson & Holmqvist 2011), and at least at one release site in 2013, all 8 released at that particular site were males. If only males are released, they will have difficulties of finding a suitable female partner (as there will be none in the flock). This leads to a strong imbalance of sexes and it is impossible for same-sex pairs to produce any offspring.

If one releases a large number of captive-reared birds into the wild following a season with little production of young in the reintroduced free-flying population in Sweden, it is even more difficult for the released male birds to find a partner as there will be fewer, or perhaps even no, available potential partners. If we look at the numbers released in the Swedish mountains and/or at Hudiksvall (**Figure 21**) compared to the number of young produced by the reintroduced free-flying Lesser White-fronted Geese, relatively large numbers of male Lesser White-fronted Geese reared in captivity are released even when few young are produced by the reintroduced population. In 2011, a total of 35 goslings (from 14 successful pairs) were produced, and a total of 10 male captive-reared

Lesser White-fronted Geese (seven 1st calendar year plus three 2nd calendar year) were released (Andersson & Holmqvist 2011). It was a poor breeding season in 2012 (3 young produced by the free-flying population), and 28 captive-bred birds (sex not specified) were released (Liljebäck et al. 2012) despite difficulties in finding suitable release sites. It was also a poor breeding season in 2013, and in addition there was a high mortality rate in the mountains that year (approximately 30% of the adult Lesser White-fronted Geese were predated by White-tailed Eagles). A total of 50 captive-reared Lesser White-fronted Geese were released in 2013 (42 in the mountains and an additional 8 males at Lillfjärden, Hudiksvall; Liljebäck et al. 2013). This shows that the number of male captive-reared Lesser White-fronted Geese released into the wild in Sweden in order to strengthen the feral/free-flying population is disproportionate to the number of young produced by the feral/free-flying population.

Studies have shown that individual geese have a preference for choosing mates from birds with which they are previously familiar. Additionally, first-time pairings (before any divorce or loss of mate due to death of partner) tend to be with same-aged birds (Black & Owen 1995). There are several advantages to being paired with a familiar partner, not least that they are likely to have improved chances of reproductive success since both pair members will have already built up a base of experience in a particular breeding area (Choudhury & Black 1994). An example which may be the norm rather than the exception was of a female Barnacle Goose that lost its mate. This female waited 23 months before finding a new mate, despite the availability of over 1,000 younger potential mates. She eventually paired to her new mate, a male with whom she had shared the same brood-rearing area with when they were both goslings. **Releasing of only males in some seasons does not necessarily mean that they might easily find mates if mainly (or only) females were to be released the following season, as the potential mates will be unfamiliar individuals, and there is no guarantee that these would pair up.**

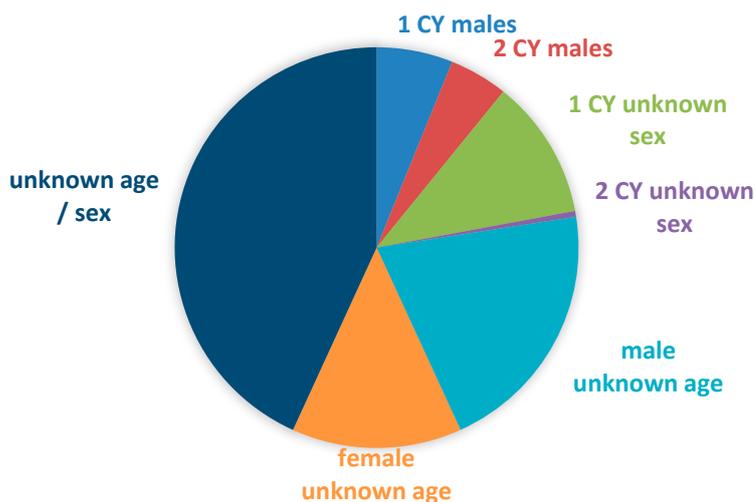


Figure 49. Age and sex distribution of Lesser White-fronted Geese released in Sweden 2010-2014. Data on age and sex ratios is not available for all seasons.

5.8 Culling of released Lesser White-fronted Geese in Sweden and Norway

In Norway, two incidences of culling of released Lesser White-fronted Geese have been carried out by personnel from the Norwegian State Inspectorate (SNO) in Porsanger in Finnmark, following permissions issued by the Norwegian Environment Agency in 2012 (ref.: 2012/3746 ART-VI-JAA) and 2015 (ref.: 2015/3921) respectively. The reason in both cases was that these individuals, who were not using traditional migration routes, but were migrating to Western Europe, could attract birds from the wild population to areas in either Sweden or the Netherlands/Germany. This could lead to serious negative consequences for the wild Fennoscandian Lesser White-fronted Goose population, with loss of the unique and natural migration routes and subsequent loss of staging and wintering populations for countries such as Hungary and Greece, who are host countries for the Fennoscandian population for a large part of the year. The decision by the Norwegian Environment Agency has support in both the adopted Norwegian national action plan and the International Single Species Action Plan who consider the Swedish release project to be a threat to the wild Fennoscandian population.

The first bird (black neckband with white inscription A16, ring no.: CA21169, released in Finnmark, Norway 26th August 2010, see **chapter 4.5**), was culled together with its partner on 23rd May 2012. [measurements: wing 356 mm, weight 1880 g., bill 32.9 mm, blaze 27.0 mm, head+bill 83.7 mm, bill nail 11.3 mm, tarsus 72.9 mm]. The ringed bird was released at the Valdak Marshes in Porsanger in autumn 2010 (see **chapter 4.5**). It was sexed as a male by personnel at “Nordens Ark”, Sweden, but was paired and behaved like a female when observed at the Valdak Marshes in spring prior to the culling. The accompanying male (adult, 3cy+ [measurements: wing 388 mm, weight 1780 g., bill 35.0 mm, blaze 34.1 mm, Head+bill 88.9 mm, bill nail 11.5 mm, tarsus 70.1 mm) was also culled when it was confirmed that it could not be found in the archives of individually identified Lesser White-fronted Geese from any of the staging or wintering sites the same year or from the archives of birds from previous years, thereby confirming suspicions that this was not a bird originating from the wild Fennoscandian population.

On 13th May 2015, a Swedish Lesser White-fronted Goose with blue colour ring with a white letter P on left tarsus and yellow ring above steel ring on right tarsus (“Blue P”, ring no. 9181709 Riksmuseet Stockholm, released in Sweden 12th July 2013) was culled on a farm field by personnel from the Norwegian State Inspectorate. [measurements: wing 362mm, weight 1630 g., bill 32.5 mm, blaze 22.1 mm, head+bill 84.2 mm, bill height 20.3 mm, bill nail 10.7 mm, tarsus 63.2 mm].



The Swedish released bird “Blue P” in association with a Greylag Goose at the north side of Stabbursnes River 10th May 2015. Photo: Tomas Aarvak



The Swedish released bird “Blue P” was culled on 13th May 2015 because it used a human-modified migration route to the Netherlands and as such represented a considerable threat to the wild birds using traditional routes to the wintering areas in Greece. Note also that the bird was using agricultural land together with Bean Geese and Greylag Geese despite the close proximity of the Valdak Marshes, just 2 km away. However, the individual was also observed at the Valdak Marshes before the wild Lesser White-fronted Geese arrived. These marshes are the most important spring staging site in Fennoscandia. Photo: Tomas Aarvak

In Sweden, the problem with male Lesser White-fronted Geese becoming imprinted upon Barnacle Geese has partly been resolved with three birds which were paired to Barnacle Geese being culled in 2007. Several attempts have been made to cull the last two males of those five, which are imprinted upon Barnacle Geese. The last report of any of these was in late 2013 according to Niklas Liljebäck in a memo to BirdLife International in 2015. In addition to the three Lesser White-fronted Geese culled in 2007, an additional two males following Barnacle Goose flocks were culled in 2005 and 2009 respectively, bringing the total up to five culled Lesser White-fronted Geese in Sweden. There were strong negative reactions by the Swedish Association for Hunting and Wildlife Management on the culling of the one bird in 2015 in Norway (e.g. on the web pages of the organisation). However, this must be considered as an overreaction as there has been no negative reactions from the Swedish Association for Hunting and Wildlife Management to the culling of several released Lesser White-fronted Geese with undesired behaviour within Sweden.

Also evident first generation hybrids between Lesser White-fronted Goose x Barnacle Goose have been culled in Sweden. The extent of this culling practice in Sweden is not known to us.

6. THE LESSER WHITE-FRONTED GOOSE SINGLE SPECIES ACTION PLAN

Following the continued decline of the species, steps were taken to develop internationally agreed framework plans for the conservation of the Lesser White-fronted Goose: first in the form of an EU Action Plan (1996-1999) which was then superseded by an International Action Plan adopted under the African-Eurasian Migratory Waterbird Agreement (AEWA) in 2008. A brief description of the various stages of the international action-planning process under AEWA (2005-2016) – including decisions taken and recommendations provided - is presented below. The focus thereby is in particular on how the reintroduced Swedish Lesser White-fronted Goose population was taken into account following the discovery of alien genes in the Swedish captive stock in 1999/2000 and the resulting moratorium issued on further releases by the Swedish authorities.

6.1 International Single Species Action Plan Workshop in Lammi, Finland, April 2005

A workshop was held in Lammi, Finland in April 2005, in order to provide basic information for the International Single Species Action Plan (ISSAP). At the workshop, both stakeholders in favour of the ongoing reintroduction projects as well as experts critical to the reintroductions were represented. Because a compromise solution for the genetic and reintroduction issues was not reached during the meeting, the compilers of the Action Plan decided to submit a dossier on the issue for an independent review by the Scientific Council of the Convention on Migratory Species (CMS), with a request that the Scientific Council should provide advice on the future of reintroduction projects for Lesser White-fronted Geese.

6.2 Conclusions and recommendations from CMS Scientific Council in November 2005

As a follow-up of the decisions from the Lammi workshop (see **chapter 6.1**), a dossier was transmitted by BirdLife International to the CMS Secretariat in July 2005. The stakeholders in favour of the continuation of the existing reintroduction projects as well as in favour of embarking on new projects, argued that the dossier did not fully represent the situation at hand, and were therefore encouraged to provide the Scientific Council with additional information. Their contributions were taken into account by the Scientific Council in preparing its conclusions and recommendations, which were finalised and adopted at the 13th Meeting of the CMS Scientific Council in Nairobi, Kenya, on 18th November 2005 (including additional comments by Dr. Robert C. Lacy).

The CMS Scientific Council's main conclusions were as follows:

“4. We consider that every effort should be made to conserve the Fennoscandian birds down their traditional migration routes into southeastern Europe and the Caspian/Central Asian region. We recognise that this is a major challenge. We endorse the current LIFE project that aims to safeguard the birds and their habitats along the western route. It is our opinion that all appropriate efforts should also be made to conserve the wild populations of the species in its other flyways.

*5. We consider that doubts do remain about the genetic make-up of the existing free-flying birds, originally introduced into the wild in Fennoscandia, and which winter in the Netherlands. It does seem to us that not all, but a large part, of the scientific community will never be completely satisfied concerning the level of genetic contamination from the Greater White-fronted Goose *Anser albifrons* and other species, which many will regard as impossible*

to eliminate. Despite genuine efforts to improve the genetic purity of existing captive flocks we consider that these flocks are not to be regarded as potential sources for release to the wild.

6. Given the possibility that the above-mentioned free-flying birds, or their descendants, may pose a risk to the genetic make-up of the wild Fennoscandian population, the Scientific Council is of the opinion that **these birds should be caught or otherwise removed from the wild**. We do not say this lightly, nor underestimate the practical and other difficulties involved. We recommend that a feasibility study be undertaken as a matter of urgency.

7. We believe that there is nothing against establishing a group in captivity of purebred Lesser Whitefronts from the wild, western Russian stock, and it may well prove valuable to have such a group in the future. However, **we do not believe that it is appropriate to release such birds to the wild now or in the immediate future**.

8. For the present, we **do not support the introduction of Lesser Whitefronts into flyways where they do not occur naturally**. We have borne in mind the powerful argument concerning the improved safety of birds in these flyways, as well as practical considerations, such as current proposals that could quickly be put into effect. However, we consider that modifying the natural behaviour of Lesser White-fronts in this respect, as well as unknown ecological effects in the chosen new flyways, and other such considerations, make this technique inappropriate until such time as it may become essential, particularly when major disruption or destruction occurs of key components of the natural flyways. We do not believe that to be the case at present. We give due weight to arguments about the continuing decline of the very small Fennoscandian population, and to the estimates of how long it may continue to be viable, but we are not persuaded that such a fact alone is enough to justify radical action.”

As indicated above, the CMS Scientific Council also took into account additional comments submitted by Dr. Lacy, who was commissioned by the stakeholders in favour of continuing the existing reintroduction project. These comments proposed a replenishment or “dilution” approach to the introgression of alien genes, whereby pure-bred birds (i.e. individuals without alien genes) could be introduced into the population carrying alien genes. However, these comments did not alter the conclusions of the Scientific Council, but were rather included as an annex to their report.

6.3 AEWA Secretariat negotiating mission in 2007

Even though all the range states to the ISSAP had agreed to ask the CMS Scientific Council for recommendations on the conflicting issues to be adhered to going forward, Sweden and Germany did not accept the conclusions of the Scientific Council. The preliminary negotiations concerning the contentious section of the draft International Single Species Action Plan (July 2006 version) thus failed to reach a consensus amongst the range states. In January 2007, the AEWA Secretariat thus undertook a series of consultations with representatives of the governments of Finland, Germany, Norway and Sweden, with the aim to reach a compromise on a way forward for the contentious part of the draft Action Plan (AEWA 2007). The following were the verbatim conclusions of the negotiation mission, as drafted by the AEWA Secretariat and supported by the Parties (governments) concerned. These conclusions constituted the basis for dealing with issues of captive breeding, reintroduction and supplementing (‘supplementation’) of the Fennoscandian population in the framework of the AEWA ISSAP:

“1. The parties agree that the main priority for the conservation of the LWfG is the preservation of the wild populations breeding in Fennoscandia and Russia and that the work on the SSAP and any decisions should follow the code of transparency and accountability so that they can be subject to scientific scrutiny at any time. The parties will be considering support for conservation on the ground along their flyways. Particular attention shall be paid to mortality due to hunting and urgent targeted measures should be implemented to reduce the magnitude of this threat, the success of which shall be promptly and regularly reviewed and evaluated. Supplementation with captive-bred birds should be considered if other conservation measures are not as quickly efficient as needed and should populations continue to decline. As with any other captive breeding, reintroduction or supplementation initiatives this project will be subject to consideration by the Committee for LWfG captive breeding, reintroduction and supplementation in Fennoscandia (see conclusion 3 below).

The efficiency of conservation measures is to be assessed by the International LWfG Working Group.

2. The parties agree that an International LWfG Working Group should be established, consisting of governmental representatives of all Range States, who would be free to bring in their own experts and use their support. The group will be chaired by the AEWA Secretariat (efficient chairmanship would be possible only if additional support staff (coordinator for the ISSAP) and supplementary budget are made available to the Secretariat) and will operate in accordance with ToR developed by the AEWA Secretariat, approved by the Range states and endorsed by the AEWA Technical Committee.

*3. The parties agree on the establishment of a Committee for LWfG captive breeding, reintroduction and supplementation in Fennoscandia, consisting of governmental representatives of Sweden, Finland, and Norway, who would be free to bring in their own experts and use their support. The Committee will be chaired by the AEWA Secretariat (efficient chairmanship would be possible only if additional support staff (coordinator for the ISSAP) and supplementary budget are made available to the Secretariat) **and will operate in accordance with Terms of Reference developed by the AEWA Secretariat, approved by the three states and endorsed by the AEWA Technical Committee.***

4. The parties agree that a captive stock of wild Fennoscandian birds should be established, subject to the conclusions of a feasibility study. The long-term future of all captive breeding programmes will be reviewed by the Committee for LWfG captive breeding, reintroduction and supplementation in Fennoscandia.

5. The parties agree that the Swedish captive breeding programme could carry on as long as it is based on wild birds only. The long-term future of all captive breeding programmes will be reviewed by the Committee for LWfG captive breeding, reintroduction and supplementation in Fennoscandia.

6. The parties agree that the current free-flying flock, breeding in Sweden and wintering in the Netherlands, will remain in the wild, subject to genetic screening and refinement, i.e. removal of apparent hybrids, which will be undertaken following the conclusion of a feasibility study. Further on the dilution with purebred birds is considered a principally viable option. The long-term future of all reintroduction and supplementation programmes will be reviewed by the Committee for LWfG captive breeding, reintroduction and supplementation in Fennoscandia taking full account of, amongst others, the success of conservation actions, including revival of the wild Fennoscandian population, and other pertinent factors. Decisions regarding the Swedish free-flying population should also take into account the conclusions of the independent review and evaluation of available LWfG genetic studies (see conclusion 8 below).

7. The parties agree that the implementation of the pilot experimental project of the NGO 'Aktion Zwerggans' will be postponed by three years. As with any other captive breeding, supplementation or reintroduction initiatives this project will be subject to consideration by the Committee for LWfG captive breeding, reintroduction and supplementation in Fennoscandia.

8. The parties agree that a review and evaluation of the existing genetic LWfG studies by an independent expert(s) with proper scientific expertise and experience (ideally in molecular DNA analysis of birds, conservation genetics and statistical proficiency) should be undertaken. This work will be commissioned by the AEWA Secretariat to an independent expert(s) selected by the Secretariat too. The conclusions of this independent evaluation will be submitted to the Committee for LWfG captive breeding, reintroduction and supplementation in Fennoscandia and the International LWfG Working Group for their consideration."

6.4 The Committee for Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia (RECAP)

Long-standing major differences of opinion exist amongst the Lesser White-fronted Goose range states as well as other stakeholders in Europe on how captive breeding, reintroduction and supplementation of Lesser White-fronted Geese should best be approached. The disagreement, in particular on which actions should be undertaken with regard to the Swedish reintroduced Lesser White-fronted Goose population, have constituted a major obstacle for the conservation work on the wild populations of Lesser White-fronted Geese. Therefore, the AEWA negotiation mission in 2007 reached the agreement that a separate committee was to be established (as a sub-set to the future AEWA Lesser White-fronted Goose International Working Group, which was convened in 2009) to discuss the issues related to captive breeding, reintroduction and supplementation of Lesser White-fronted Goose in Fennoscandia. This is outlined in point 3 of the agreement from the negotiating mission (see **chapter 6.3**). The Committee for Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia (RECAP Committee) was subsequently convened by the AEWA Secretariat in 2008 to discuss possible contentious issues and to review any future reintroduction and supplementation projects. Sweden, Norway and Finland were full Committee members. In addition, representatives from Germany had an observer status within the Committee (AEWA 2011b). The AEWA Secretariat chaired the Committee.

The important task envisaged for the RECAP Committee was to achieve enhanced international cooperation for the protection of the Lesser White-fronted Goose by providing technical advice and joint recommendations to guide activities for a sustainable and viable breeding population in Fennoscandia. The focus of the RECAP Committee with regard to the Fennoscandian breeding population of Lesser White-fronted Geese was to recommend actions for breeding in captivity and release into the wild (AEWA 2008a, b).

The RECAP Committee had its first meeting in Bonn in May 2008, and input from the Committee meeting was taken into account in the current AEWA ISSAP (Jones et al. 2008).

From the Terms of Reference for the RECAP committee (AEWA 2007):

"The overall goal of the Committee is to conserve and restore the wild Fennoscandian population of Lesser White-fronted Geese to a favourable conservation status.

In accordance with the objectives of “Results Area 4” of the LWfG International Single Species Action Plan, the Committee’s objectives are:

1 - No introgression of DNA from other goose species into the wild population occurs as a result of past and further releases.

2 - Alien DNA introgression from birds released in the past is minimised.

3 - The members to the Committee, supported by thematic expert advice and coordination between countries, are effectively guiding the implementation in Fennoscandia of ‘Result Area 4’ of the International Single Species Action Plan for the Lesser White-fronted Goose.”

6.4.1 1st meeting of the RECAP Committee in 2008

Delegations from the four countries Norway, Finland, Sweden and Germany, as well as their scientific and conservation experts came together in Bonn, Germany on 7th-8th May 2008 to establish the Lesser White-fronted Goose RECAP Committee.

From the minutes of the first meeting (AEWA 2008c): *“The Committee’s purpose is to guide the future of the small Fennoscandian population of this globally threatened species. It has been long declared that saving the remaining circa 25 breeding pairs of wild Lesser White-fronted Geese in Fennoscandia is common sense and that, consequently, this population should be at the heart of all related conservation efforts. However, opinions still widely diverge on the questions (i) whether the wild population should be supplemented by releasing specimen bred in captivity; and (ii) if, and under which preconditions, should captive-bred birds be introduced on new flyways.*

The terms of reference and procedures for the Committee were finalised by AEWA based on input received from participating government officials and their invited experts. Overall guidance will be provided by the International Single Species Action Plan for the Conservation of the Lesser White-fronted Goose. The draft Plan has been revised under the auspices of AEWA and is currently being considered by the 22 Principal Range States to the species.”

It was decided that the next meeting should be held in November that same year, and that the RECAP Committee would then focus its attention on an independent scientific review of the status of knowledge on the genetics of Lesser White-fronted Geese amongst other tasks agreed during the 1st meeting (AEWA 2008c).

6.4.2 2nd meeting of the RECAP Committee in 2009

The RECAP Committee held its second meeting at the zoo *Nordens Ark* in Sweden on the 7th - 8th of September 2009. The Swedish Environment Protection Agency (SEPA), the Norwegian Directorate for Nature Management and the Finnish Ministry of the Environment participated in the meeting. Also experts from the Wildfowl and Wetlands Trust (WWT), Birdlife Norway, the Swedish Association for Hunting and Wildlife Management, the County Administrative Board of Norrbotten (Sweden), the University of Lund (Sweden), the University of Oulu (Finland), Nordens Ark and the AEWA Secretariat joined this 2nd meeting. Representatives from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the German Federal Agency for Nature Conservation (BfN) also attended as observers.

From the minutes of the 2nd meeting (AEWA 2009a, b): *“Following the presentation of the Swedish feasibility study on the possibilities of refining the Swedish free-flying flock of Lesser White-fronted Geese, which winters in the Netherlands, the Committee decided that some birds should be captured for genetic testing to look for traces of hybridization with other goose species. Based on the results of these tests, the RECAP Committee will decide how to proceed with the supplementation programme in Sweden. Committee members made final comments on the draft Terms of Reference for an independent scientific review of Lesser White-fronted Goose genetics and the final amended version is expected to be adopted within the next weeks. It is hoped that the review will, amongst other issues, help clarify the conditions under which further reintroduction or supplementation activities could be carried out. In addition, the Committee decided on some new activities, such as a set of guidelines on best practices of breeding Lesser White-fronted Geese for release into the wild to be compiled by WWT and Nordens Ark. An independent scientific review on Lesser White-fronted Goose flyway literature will also be commissioned.”* (AEWA 2009a, b).

6.4.3 3rd meeting of the RECAP Committee in 2010

The RECAP Committee held its third meeting at the UN Campus in Bonn, Germany on 7th-8th October 2010. Representatives from Finland, Germany, Norway and Sweden provided updates on their country's latest activities on the issue of Lesser White-fronted Goose reintroduction, captive breeding and supplementation, as well as updates on other national Lesser White-fronted Goose conservation activities.

Topics on the agenda also included an independent review on Lesser White-fronted Goose genetics (the Amato summary, see **chapter 8.2**) as well as a presentation by the Wetlands and Wildfowl Trust (WWT) of their feasibility study for a Lesser White-fronted Goose reintroduction/supplementation project in Norway (see **chapter 8.6**). The Terms of Reference (ToR) for an independent review on Lesser White-fronted Goose flyways was also discussed and approved by the group (see **chapter 6.4**).

The RECAP Committee also reviewed a project proposal by the German NGO Aktion Zwerggans for the implementation of two test-flights in the scope of the Lesser White-fronted Goose microflight project (AEWA 2010a).

From the minutes of the 3rd RECAP committee meeting (AEWA 2011a): *“Amato review: Sweden agreed with the conclusions made by Amato, but thought the conclusions should also mention that a low level of hybridization between wild populations of Lesser White-fronted Geese and Greater White-fronted Geese cannot be ruled out with the genetic data due to insufficient sample sizes.*

The Secretariat commented that the issue of habitat preference is very interesting for the overall conservation of the species and should be kept in mind. Sweden added that the draft Swedish National Action Plan for the species includes activities which strive to restore or manage areas for the Lesser White-fronted Goose in its original habitat. In this respect, climate change poses a challenge as to how habitats can in future be managed in order to ensure that Lesser White-fronted Geese will find suitable habitats in the face of climate change. All RECAP Committee countries agreed with the conclusions and recommendations of the review.

Action Zwerggans: Sweden explained under which restrictions Aktion Zwerggans has been granted permission by the Swedish Environmental Protection Agency (SEPA) to conduct their proposed pilot project (Doc. LWfG RECAP 3.8.2). One of the main criteria is that the birds to be used must be of pure genetic origin. Sweden stressed that the SEPA does not own the captive breeding birds at “Nordens Ark”. They are property of the Swedish Association for Hunting and Wildlife Management who will

have to give their permission as to how the birds – if any – are used. Sweden sees the Aktion Zwerggans project as an experiment through which more information for the conservation of the LWfG can be derived. Valuable new insights could be gained regarding local re-introduction, alternative sites, and whether or not captive-reared young survive better when following an ultra-light aircraft than when trying to associate with and follow wild conspecifics during migration etc. Decision: No decision was reached on the Aktion Zwerggans project proposal.

Sweden announced that it had requested the addition of a new item to the International Working Group (IWG) agenda concerning erroneous information about the Swedish population contained in the International Single Species Action Plan. Sweden explained that the original Swedish population was never reported as extinct, meaning that the Swedish Lesser White-fronted Goose project was in fact a supplementation, not a reintroduction. Eight independent observers saw birds in the area where the captive bred birds and foster parents were released. Edited texts to this effect were sent to the Secretariat during the drafting of the SSAP, but they were not taken into consideration. The Secretariat replied that whilst there may well have been a few wild birds remnant of the wild population present, the question is whether it is enough that some birds were seen in the release area for the release to be considered a deliberate supplementation. Sweden responded that in the late 1970s there were no guidelines with definitions of “re-introduction” vs. “supplementation”. In 1979 and 1981, unringed adults with young were seen by independent observers in the release area. The IUCN guidelines make no distinction in the definitions (supplementation/reintroduction) if a flyway has been changed. As described for supplementation in the IUCN guidelines, Sweden had a local regional population in place since starting to release the colour-ringed captive-reared birds and foster parents in 1981. Therefore, the SSAP text is simply not correct. The Secretariat responded that the SSAP was adopted by the AEWA Meetings of Parties (MOP) – including by Sweden – and that it cannot be changed just like that. The Chair suggested that Sweden send all the relevant information to the UNEP/AEWA Secretariat, upon which the Secretariat will come back with a proposal. Changes to the goals, actions etc. in the SSAP would have to go through the whole Action Plan revision process and ultimately be adopted by the MOP. Sweden replied that changes to the terminology and the background information about Lesser White-fronted Geese in Sweden might be enough to cover Sweden’s concerns. Sweden will check the SSAP and inform the Secretariat of the extent of changes it deems necessary. The Secretariat suggested that this item should be kept as an information point on the agenda of the international meeting, and not be opened for discussion there. The issue should instead be discussed within the RECAP Committee” (AEWA 2011a).

6.4.4 4th meeting of the RECAP Committee in 2011

The RECAP Committee held its fourth meeting on 16th June 2011 at the UN Campus in Bonn, Germany. Governmental representatives from Finland, Norway and Sweden as well as from the observer country Germany participated. One of the main agenda items was the presentation of an independent review on Lesser White-fronted Goose flyways in Europe prepared by the British Trust for Ornithology (BTO) (see **chapter 8.1**). The review was commissioned by the AEWA Secretariat on behalf of the RECAP Committee in an attempt to shed more light on the claims from the stakeholders supporting continued reintroduction activities that there has been an historical Western European flyway of the Lesser White-fronted Goose before the dramatic decline of the species starting in the 1950s.

From the minutes of the 4th meeting (AEWA 2011c, d): *“The BTO representatives Andy Musgrove and John Marchant started off the meeting with a presentation of the review, including the main conclusion that there is little evidence that Lesser White-fronted Geese were migrating along a so-called “Atlantic flyway” from the breeding areas in northern Sweden to the south over western parts*

of Germany and the Netherlands, although the possibility that such a migration route had existed in the past, before European ornithology had developed sufficiently to record it, could not be completely ruled out. Whilst the Committee agreed with the conclusions of the review, Sweden requested that BTO in addition look at web-based data on Lesser White-fronted Goose sightings to complement the information derived from published data and to see if this additional information would perhaps alter some of the conclusions of the review. Sweden also presented a request that background information on the Swedish LWfG population in the International Single Species Action Plan (SSAP) which it considers to be incorrect should be revised as soon as possible. The request in particular concerns changing the labelling of the Swedish population to supplemented instead of reintroduced.

Following a discussion, Committee members agreed that any revision of the SSAP will have to be undertaken by a decision-making body of the Agreement. Sweden was requested by the Chair to submit its proposal for amendments in writing to the next AEWA Technical Committee Meeting in September 2011, from which it can be passed on for a decision to the AEWA Standing Committee in November and the fifth Meeting of the Parties to AEWA in May 2012, if necessary”.

Other topics on the agenda included national reports on the current situation of the Lesser White-fronted Goose in each country, as well as an update on the ongoing implementation of the ISSAP (AEWA 2011c, d).

6.4.5 5th meeting of the RECAP Committee in 2013

The 5th Meeting of the RECAP Committee took place on 12th February 2013, at the UN Campus in Bonn. Governmental representatives from Finland, Germany, Norway and Sweden participated as well as national experts from BirdLife Norway, the Swedish Association for Hunting and Wildlife Management and the University of Oulu, Finland. The main purpose of the meeting was to discuss outstanding contentious Lesser White-fronted Goose conservation issues being dealt with under the RECAP Committee in preparation for the revision of the AEWA International Single Species Action Plan for the species, which was set to take place that year (2013).

From the minutes of the 5th meeting (AEWA 2013): “Topics discussed included Lesser White-fronted Goose flyways in Europe, a possible re-definition of the Lesser White-fronted Goose population breeding in Sweden on the basis of advice provided by the IUCN Reintroduction Specialist Group, as well as the conservation focus of the revised Single Species Action Plan for the Lesser White-fronted Goose. In addition, participants took part in a brainstorming exercise to produce an updated Action Framework concerning tackling the possible presence of alien genes within the population breeding in Sweden. Finland, Norway and Sweden also provided participants with updates on their ongoing national conservation efforts for the Lesser White-fronted Goose.

Decisions taken at the meeting concerning Lesser White-fronted Goose issues being dealt with by the committee will be reflected in the revised draft of the Single Species Action Plan, which is foreseen to be distributed to all range states for comments and national coordination this spring”.

6.4.6 Evaluation of the function of the RECAP Committee

When the Terms of Reference for the RECAP Committee were discussed and adopted, Sweden opposed giving the Committee any decision-making role with regard to future Lesser White-fronted Goose reintroduction/supplementation projects, thus denying the Committee the possibility to exert any real influence from the outset. As such, the Committee was diminished to a forum for the

member countries to update each other on their various activities and to seek expert guidance (confer **chapter 6.4.1**). That said, the existence of the Committee did initially provide an accepted forum for the range states in question to discuss contentious issues, which in turn allowed the wider Lesser White-fronted Goose conservation community to start moving ahead with the implementation of urgent conservation action for the species as identified in the 2008 AEWA ISSAP.

It should be noted that Sweden (as well as the observer country Germany) has consistently only agreed to acknowledge independent scientific expert guidance sought within the framework of the RECAP Committee which supported their own claims. Thus, they have accepted the summary of Amato (2010), but not the British Trust for Ornithology (BTO) review on European flyways of Lesser White-fronted Geese (Marchant & Musgrove 2011). This led to increased tension amongst the RECAP range states and confirmed the impression that Sweden was merely using the RECAP Committee as a forum to pursue their own objectives as opposed to actually addressing or seeking solutions with regard to the concerns of the other countries.

The minutes of the five meetings of the RECAP Committee (**chapters 6.4.1 – 6.4.5**) confirm that the topics of discussion as well as the tasks carried out were mainly linked to requests from Sweden, which in turn were directed towards finding support for their position that the Swedish population is a wild naturally occurring population with a natural migration route and with negligible deviations in ecological traits as compared with the original wild Fennoscandian population.

Due to the repeated complaints from Sweden concerning the international status of the Swedish reintroduced population, the working capacity of the Committee members, their national experts as well as the AEWA Lesser White-fronted Goose International Working Group as well as the AEWA Secretariat was increasingly focused on the commissioning of reviews on these subjects as well as with the recurring need to correct erroneous statements made by Sweden considering the characteristics and history of the Swedish reintroduced population. Over time, this situation again blocked much of the international work on the conservation of the threatened wild populations of the species. Thus, little time or capacity was available for the important work on fulfilling the RECAP Committee Terms of Reference (see **chapter 6.4**) and the overall goal of conserving and restoring the wild Fennoscandian population of Lesser White-fronted Geese to a favourable conservation status – which from the outset was agreed to be the main focus of the work.

Despite many years of consultations at government level within the RECAP Committee and the issuance of much independent expert advice from various experts and organisations, the Committee was by 2014 unable to reach an agreement on the main contentious issues regarding the status, possible threat and future of the Swedish Lesser White-fronted Goose population. Following bilateral negotiations on the draft revised AEWA International Single Species Action Plan for the Lesser White-fronted Goose between Sweden and Norway during 2014 and 2015, both countries decided that the contentious issues regarding the conservation of the species could in future be dealt with bilaterally. Sweden and Norway informed the AEWA Secretariat of their wish to dissolve the Committee and following confirmation from Sweden, the Committee formally ceased to exist in August 2015.

7. STATUS OF THE SWEDISH REINTRODUCED POPULATION IN THE INTERNATIONAL SSAP AND THE ONGOING REVISION PROCESS

The International Single Species Action Plan (ISSAP) for the Conservation of the Lesser White-fronted Goose adopted under AEWA in 2008 provides the agreed international framework for all conservation activities and cooperation for the species within the AEWA region.

In the current International SSAP (Jones et al. 2008), the Swedish reintroduced population is described as follows: *“A fourth subpopulation has been created by the release of captive-bred birds within the former range of the Fennoscandian population in Sweden and by the establishment of a human modified flyway”*. Furthermore, the current International SSAP defines that the main focus of the ISSAP is on the wild populations of Lesser White-fronted Geese, and one of the eight principles for implementation of the ISSAP is that *“The main priority for the conservation of the Lesser White-fronted Goose is the maintenance of the wild populations breeding in Fennoscandia and Russia.”* The ISSAP also states that *“The Action Plan also takes into account the population derived from captive-bred birds and used for restocking in Swedish Lapland, migrating to winter in the Netherlands. According to previous agreements between the Fennoscandian Range States and in line with AEWA’s mission, the main focus of this plan is the conservation of the wild populations (AEWA 2007).”*

One of the concrete conservation actions in the current International SSAP (Jones et al. 2008) is that *“Any future release of captive bred birds involves only individuals reared from wild-caught stock. Apparent hybrid geese are removed from existing free-flying introduced flock, subject to findings of a feasibility study”*.

At the 2nd meeting of the AEWA Lesser White-fronted Goose International Working Group at Lake Kerkini, in Greece in November 2012, the working group launched the process of updating the existing ISSAP (in accordance with the timetable foreseen in the 2008 ISSAP). During the period July 2013-July 2015, three consultation drafts of an updated ISSAP have been circulated by the AEWA Secretariat, of which two were circulated to all range states, and one was circulated to the Committee for Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia (RECAP Committee) only. The third consultation draft has been circulated twice, both in June 2015 and in May 2016.

7.1 Status of the Swedish reintroduced population in the first ISSAP consultation draft (July 2013)

In July 2013, the first draft revised ISSAP was circulated to the principal range states of the AEWA Lesser White-fronted Goose International Working Group. The description of the status of the Swedish Lesser White-fronted Goose population in this first ISSAP consultation draft was a result of numerous compromises reached at consecutive meetings of the RECAP Committee (see **chapter 6.4**). These compromises progressively altered the descriptions from the status described in the current ISSAP (Jones et al. 2008) towards a description of the population more similar to the one used in the Swedish National Action Plan (Naturvårdsverket 2011).

In the first ISSAP update consultation draft, four Lesser White-fronted Goose populations were recognised and the Swedish population was listed together with the three wild populations: *“Swedish population (reinforced by the release of captive-bred birds within the former range of the*

Fennoscandian population in Sweden and by the establishment of a human-mediated flyway to wintering grounds in the Netherlands)".

In this consultation draft of the ISSAP update, Sweden was listed as one of the 22 "Principal Range States" that have the major responsibility for its implementation. The "*Reinforced Swedish population*" was described in detail under the headings "*Trend and estimate*" and "*Distribution throughout annual cycle*". In the description of threats: the "*Possible presence of alien genes in the Swedish population*" was listed as a low threat with the comment "*past releases of captive-bred birds in Sweden were found to contain birds with alien genetic make-up. An independent expert review commissioned by the Committee on Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia in 2010, assessed the risk presented by the occurrence of alien genes in the Swedish population to other Lesser White-fronted Goose populations to be low (Amato 2010)*".

The goal of the draft ISSAP is to increase the population size and stop the species' range contraction within the ten-year lifespan of the plan. To meet this goal, five results were outlined. One of the five main results desired in this first draft update ISSAP was "*The Swedish population is brought to a closer-to-natural-state genetic make-up*" and this was listed as "*High priority*".

Under the section on "*Result description*" the text reads as follows: "*Possible prevalence of alien genes in the Swedish reinforced population is decreased*", and under "Action description": "*Continue the Swedish captive breeding programme with Russian birds (High priority)*".

The main differences between the 2008 and the first ISSAP consultation draft regarding the Swedish reintroduction project were:

- Suggested new action in this consultation draft: Continue releases of captive bred birds from the Swedish captive breeding programme – **High priority**.
- The Swedish reintroduced free-flying population was no longer referred to as not being wild, and was referred to as the "*Swedish population*".
- In the description of the Swedish population in the first consultation draft, no reference was made to the historical fact that the migration routes of the population are man-made by imprinting released Lesser White-fronted Geese on Barnacle Geese.
- In the first consultation draft, all actions to conserve the wild Fennoscandian Lesser White-fronted Goose population would also apply for the Swedish reintroduced population, it is not stated anywhere that the main focus should be on the wild populations.
- The Swedish reintroduced population was not referred to as reintroduced but as restocked/reinforced.
- No actions were suggested for catching/screening/refinement of the Swedish reintroduced population (following the conclusion of Amato (2010)), since it was considered not feasible to carry out (conclusion from SEPA's commissioned feasibility study; Ottvall (2008)).
- The risk of genetic introgression was described as a low threat to the conservation of the Swedish reintroduced population. The risk of genetic introgression from the Swedish reintroduced population was not described as a potential threat factor to the wild Fennoscandian population.
- Continuing the Swedish reintroduction programme, despite all the ecological problems and the possible threats this population may pose to the Fennoscandian wild population was ranked as "*High priority*" in this first consultation draft of the ISSAP update.
- In the first consultation draft, descriptions of the Swedish reintroduced population as a potential threat to the wild Fennoscandian population were left out, and the corresponding actions were therefore removed.

The possible result of such an ISSAP could be an increase in the Swedish population. A parallel growth in the original Fennoscandian population (as has been the case in recent years), would increase the chance of these two populations meeting in the wild, which is considered to be a threat to the wild Fennoscandian population (as described in the current ISSAP (Jones et al. 2008). These suggested changes from the existing ISSAP were not accepted by some of the range states and concerns were raised in particular by Norway and Finland as the suggested changes were considered to be contradictory to the overall aim described in the 2008 ISSAP. In addition, both countries stressed that the threats from the Swedish population to the Fennoscandian population are real and should still be stated as such in any updated plan.

The original timetable was to finalise the ISSAP draft for preliminary adoption at the AEWA Standing Committee meeting in September 2013. Despite the efforts of the AEWA Secretariat to reach a conclusion on how to treat the issue of the Swedish reintroduced Lesser White-fronted Goose population in the draft, it became clear that this would not be possible, and the document was therefore cancelled from the Standing Committee agenda for that meeting.

7.2 Status of the Swedish reintroduced population in the 2nd ISSAP consultation draft (April 2014)

On 11th April 2014, a 2nd revised draft of the updated Lesser White-fronted Goose ISSAP was circulated to the range states in the RECAP Committee. This 2nd draft was based on the comments provided by all range states in the AEWA Lesser White-fronted Goose International Working Group on the first draft distributed in July 2013.

In the 2nd draft the three wild/original populations were recognised and listed. In addition, the draft *“takes note of a fourth population reinforced by the release of captive-bred birds within the former range of the Fennoscandian population in Sweden and by the establishment of a human-mediated flyway to wintering grounds in the Netherlands (Swedish population)”*.

In the 2nd draft, Sweden was listed as one of the 22 “Principal Range States” in the Action Plan that have the major responsibility for its implementation. The *“Reinforced Swedish population”* was described in detail under the headings *“Trend and estimate”* and *“Distribution throughout annual cycle”*.

Possible presence of alien genes in the Swedish population was described as a low (medium) threat to other Lesser White-fronted Goose populations: *“Possible negative ecological (and genetic) effects resulting from potential overlap of Swedish and Fennoscandian populations (listed as a medium threat)”*. Furthermore, the negative effects are described as follows: *“Possible negative effects on the Fennoscandian population may include the loss of the original migration route, changed habitat preferences, hybridisation with other goose species as well as less viable individuals which could lead to lower breeding success and increased adult mortality”*.

An additional result was also listed, which was also included in the first draft: *“The Swedish population is brought to a closer-to-natural-state behavioural, ecological and genetic make-up”*. The described action to achieve that result was: *“Continue releases of captive bred birds from the Swedish captive breeding programme”* (or alternatively *“Discontinue releases of captive bred birds from the Swedish captive breeding programme”*).

In an e-mail to the RECAP Committee dated 26th April 2014, the Swedish Environmental Protection Agency (SEPA) concluded that they could not in any way accept or endorse the ISSAP in its present state. SEPA considered the 2nd draft to put forward suggestions that in their view could be a violation of the statutes of the EU Birds Directive. SEPA pinpoints that *“the revised text not only discourages a favorable conservation status for the Swedish population, but also in fact proposes actions that would result in a reduction of the population”*.

7.3 Status of the Swedish reintroduced population in the 3rd ISSAP consultation draft (June 2015)

As no compromise was reached within the RECAP Committee on the remaining contentious issues, the governments of Norway and Sweden commenced bilateral talks during the summer of 2014 until February 2015 in an attempt to reach an agreement. On the basis of the bilateral negotiations a 3rd revised draft was prepared by the AEWA Secretariat and submitted to the AEWA Technical Committee in March 2015. The Technical Committee provided substantive comments on the draft and requested that several passages be further clarified in order to avoid misunderstandings in future.

Taking into account the advice from the AEWA Technical Committee as well as further deliberations with Norway and Sweden, the AEWA Secretariat circulated the 3rd revised draft to the AEWA Lesser White-fronted Goose International Working Group on 7th July 2015. The goal was at that time that the revised draft ISSAP could be adopted at the upcoming Meeting of the AEWA Parties (MOP6) in November 2015. The text regarding the Swedish Lesser White-fronted Goose population had now been amended at the request of Sweden. The Swedish population remained described as a population separate to the Fennoscandian population, but only the Fennoscandian and Western Main populations were listed as populations covered by AEWA and the draft ISSAP only contained actions to be implemented for the Fennoscandian and Western main birds.

In this 3rd draft, the Lesser White-fronted Goose populations were described in the following way: *“Four populations can be identified, three of which constitute components of the species traditional flyways”*. The Swedish population is presented as a bullet point together with the three original wild populations in the following way: *“Swedish population (reinforced by the release of captive-bred birds within the former breeding range of the Fennoscandian population in Sweden, migrating to wintering grounds in the Netherlands along a human-mediated flyway)”*.

As highlighted above only the Fennoscandian and the Western main populations (as the two populations listed under AEWA) were covered in the 3rd draft of the ISSAP, so the Swedish population, as well as the Eastern main population, were not covered. Sweden was not listed as one of the 20 “Principal Range States” in the Action Plan that have the major responsibility for its implementation. Possible negative effects due to interaction with released and/or escaped Lesser White-fronted Geese were again (as in the current ISSAP, Jones et al. 2008) described as a threat of medium importance.

The 3rd revised draft describes the *“Possible negative effects due to interaction with released and/or escaped Lesser White-fronted Geese”* as a medium threat, and one of the desired results in this draft ISSAP is that *“Contact between released and/or escaped birds and native Lesser White-fronted Geese is avoided”*. Maintaining genetic integrity and native flyways was added as an objective in this draft with the indicator: *“No pairing and/or breeding between native and released/escaped Lesser White-fronted Geese has been observed”*. Suggested actions to achieve this objective were to: *“Undertake*

regular monitoring and reporting of released and escaped Lesser White-fronted Geese (medium priority)” and to “Undertake measures to ensure that the contact between released and/or escaped birds and native Lesser White-fronted Geese is avoided (Medium-High priority)”.

Thus, the 3rd revised draft of the ISSAP considered potential interactions with released or escaped Lesser White-fronted Geese as a risk that could lead to diminished genetic integrity and altered behaviour of native birds and their offspring, as well as cause birds to diverge from their native flyways. This description of the threat and the conservation action was justified by the description of the following scenario: *“as the Fennoscandian population increases, it is expected that individuals will recolonise old breeding grounds both in Norway, Finland and Sweden, leading to an increased probability that the two populations will meet and interact. Should the Swedish reinforced population also increase and expand its range; an overlap becomes even more likely”*. In this respect, the 3rd revised draft also reflected concerns regarding *“the second layer of hybridization taking place within the Swedish population, where Lesser White-fronted Geese have been observed breeding with Barnacle Geese and producing viable offspring, which in turn have bred with both Lesser White-fronted and Barnacle Geese”*.

In a letter dated 17th August 2015 (Case number: NV-07901-11) *“Concerning the draft International Single Species Action Plan for Lesser White-fronted Goose”*, SEPA again rejects the present draft of the ISSAP. The reason for this was that *“the present version contains both new texts regarding the genetic threat posed by the Swedish population as well as new objectives concerning the same alleged threat. Also, actions that in previous versions concerned the Swedish population have been moved to other tables, rather than being omitted”*. As a compromise, Sweden suggested that the Swedish population should just be included under the Fennoscandian population and that this would solve all the controversy.

Having, yet again, failed to reach an agreement the Lesser White-fronted Goose ISSAP update issue had to be cancelled from the agenda of the AEWAs MOP6 in November 2015. Both the 2nd and the 3rd revised drafts of the updated ISSAP have been rejected by SEPA. The process of updating the ISSAP for the conservation of the Lesser White-fronted Goose has effectively been halted several times due to SEPA’s objections to the ISSAP’s description of the potential threat posed by the Swedish Lesser White-fronted Goose population to the original wild Fennoscandian Lesser White-fronted Goose population, as well as the actions that need to be taken to reduce that threat. Sweden has thus repeatedly declined to take into account the legitimate concerns of the range states hosting the Fennoscandian population as well as the basic need to apply the precautionary principle when dealing with a population with such a vulnerable status.

It should also be noted that the repeated objections of SEPA have caused a substantial delay in finalizing the much needed update of the ISSAP, and one of the direct consequences is that it is currently no longer possible to widen the scope of the Action Plan to include the Eastern main population (China, Japan, Mongolia, South Korea) as was originally decided at the 2nd Meeting of the AEWAs Lesser White-fronted Goose International Working Group in Kerkin in November 2012. The future work on updating the ISSAP remains uncertain (see **chapter 7.4** below), but the AEWAs Standing Committee confirmed in 2015 that until a new revised ISSAP for the Lesser White-fronted Goose is adopted by the AEWAs MOP, the current ISSAP (Jones et al. 2008) remains valid for implementation.

7.4 Suggested changes on the status of the Swedish reintroduced population in the 3rd ISSAP consultation draft (May 2016)

The AEWA Lesser White-fronted Goose International Working Group came together in Trondheim, Norway for its third face-to-face meeting from 12th-14th April 2016, hosted by the Norwegian Environment Agency at their premises.

Amongst other issues the Working Group also agreed on how to move forward with the revision of the 2008 ISSAP for the Lesser White-fronted Goose.

Three main options on how to proceed were outlined in the meeting documents (LWfG IWG 3.4):

1. A final one-off attempt (subject to a tight deadline) is made to have all populations of Lesser Whitefronted Geese included in the revised Action Plan, with a clear understanding that the priority under AEWA and the focus of the revised Plan shall remain on the AEWA-listed populations, which are already targeted for conservation action under the current Action Plan (Fennoscandian and Western main populations) as well as on the Eastern main population. Such a revised Action Plan would also necessarily take into account and address any possible threats to these populations in an agreed form; -
2. The scope of the Action Plan includes only the AEWA-listed populations, which are already targeted and prioritised for conservation action under the current Action Plan (Fennoscandian and Western main populations) as well as the Eastern main population; -
3. No revision is undertaken at this time and the 2008 Action Plan remains valid for implementation

Representatives from Sweden stated that option 1 was the only acceptable option for them, while representatives from Norway, Finland, Greece and Romania expressed concerns that option 1 again would lead to no agreements on conflicting issues and would further delay the update process. Instead of voting over the options it was decided that a last attempt would be undertaken to reach agreement on the conflicting issues within a very strict time limit (June 2016). If the range states failed to reach an agreement on how the Swedish population should be described and handled in the updated ISSAP, the automatic “fall-back” option would be option 2. Range States were requested to submit their comments on the latest draft revised plan, which had been circulated previously in July 2015 to the AEWA Secretariat by mid-May 2016. If necessary, the AEWA Secretariat also offered to host a face-to-face meeting in June 2016 at the UN campus in Bonn to discuss any proposed compromise solutions.

The AEWA Secretariat received substantive comments on the 3rd draft (of July 2015) from Sweden supported by the Netherlands and Germany. The main ideas of the suggested changes to the ISSAP were to again include the Swedish population as a part of the ISSAP with the objective of strengthening the Swedish population and its flyway and that no action needs to be initiated in terms of screening wild birds for evidence of hybrid genes or in removing birds from the ecosystem. The AEWA Secretariat subsequently requested the government representatives from the range states of the Fennoscandian for their views on the suggestions for revision presented by Sweden. The governments of Estonia, Finland, Greece, Hungary and Norway (supported by expert comments from Lithuania) all replied that they could not agree to include the Swedish population in the revised Action Plan in the form proposed by Sweden. In summary their general position was that the main focus of any revised Action Plan should clearly be on the conservation of the AEWA-listed populations (Fennoscandian and Western main) and that the concerns regarding the possible threat posed by the Swedish population to the Fennoscandian population needed to be sufficiently taken

into account (also so as not to undermine the conservation efforts undertaken during the past decade(s) in many of these countries). The more detailed comments submitted by Norway and Finland are referenced below.

In the response from Norway in letter sent by e-mail to the AEWA Secretariat on the 26th May 2016, the main message was as follows: *“We recognize the fact that Norway and Sweden are separated in our views on the importance of conserving not only the species but also the traditional flyways, and consequently behavioral traits of the species. This situation has been stable the last twenty years. We firmly believe that occurrence of birds originating from captive stock has the potential of seriously compromising our efforts to conserve the traditional flyway. Thus, a revision of the ISSAP should address the clear and present danger to the Fennoscandian population by birds without any site fidelity and connection to the traditional flyway. The ISSAP should also address the risk of these birds randomly establish new sites for every part of their life-cycle. The main idea of the suggested changes to the ISSAP is to include the Swedish manipulated flyway birds as a part of the ISSAP. A project that has not been widely accepted as viable and as mentioned also regarded as a threat to the original wild population”.*

The main message in the response from Finland (sent in an e-mail to the AEWA Secretariat on the 25th May 2016) to the suggested changes from Sweden was as follows: *“Finland shares the position of Norway regarding the suggested changes to the draft LWfG ISSAP. Finland has been working in long term, in very close co-operation with Norway, in order to conserve the wild Fennoscandian population of the LWfG. Finally, the persistent international conservation efforts seem to take effect as in spring 2016 the number of spring staging LWfG in Finland exceeded 100 individuals, for the first time since 1963. In this situation, there is no reason to include actions for strengthening the Swedish reintroduced population and its flyway (as a back-up plan if the conservation of the wild Fennoscandian population would fail) in the LWfG ISSAP.*

Finnish position is that the reintroduced Swedish LWfG population is not be considered as a target population of the conservation objectives of the revised LWfG ISSAP, but to be described as a manipulated flyway population which poses a potential threat for the wild Fennoscandian population of the LWfG. In the suggested changes (May 2016) there is also partly misleading statements, e.g. related to recruitment of the wild Fennoscandian population, and the possible negative effects due to interaction with released and/or escaped LWfG”.

Norway suggested, as a compromise, that the descriptive texts referring to the Swedish population could be removed from the revised Plan, and that all information regarding the Swedish population with a description of the ongoing activities could rather be included in a separate information chapter or annex instead. Following the agreement in Trondheim as well as consultations with the Chair of the International Working Group, the AEWA Secretariat suggested to convene a one-day face-to-face meeting to discuss this suggested option (or other possible options) for including the Swedish population in the revised Action Plan in a way that would be acceptable to all range states.

The ongoing diverging views amongst the EU member states led to an involvement of the EU Commission and on the 1st June 2016 an email from Nicola Notaro (Head of Unit, DG Environment - Unit B3 – Nature) with the following content was distributed to the NADEG (formerly known as the Ornis Committee) members:

*“As you know a revised International Single Species Action Plan for the Conservation of the Lesser White-fronted Goose (*Anser erythropus*) in the Western Palearctic region is under preparation and this work is led by the AEWA Secretariat.*

I have been made aware that the experts of the AEWA Lesser White-fronted Goose International Working Group are currently discussing the revised plan and particularly the question on whether the Swedish population, which migrates to Germany and the Netherlands, would also be covered by the revised plan. The previous international plan prepared with support under the LIFE fund did include this population. This discussion appears to involve several EU Member States experts (in copy here) and Norway and is proving to be controversial. While from the Commission's side we very much favour and foster the involvement of experts from all Member States in discussions under multilateral environmental agreements such as AEWA, there is also a legal duty for all our Member States based on the EU Treaty - to coordinate their views and reach unity in the external representation of the EU when policy/political decisions are to be taken under those agreements. As the current discussion involves such a policy decision I am writing to you to ensure a co-ordinated joint EU view on this issue. I am addressing all 12 Member States included as principle range States in the draft Plan.

The Commission has informed the AEWA Secretariat that the Commission view is that, whereas priority should be given to the natural flyway, the Western flyway originating from the Swedish population should be recognised as well. This means that the Swedish population should form part of the revised Action Plan.

I would like to hereby ask you for your agreement to this position. Please provide Marita Arvela with your reaction by the 8th of June close of play. No reaction will be considered as agreement”.

The contents in the letter from the EU Commission were followed by an immediate strong and clear response from the Finnish NADEG Committee member Heikki Korpelainen on the 3rd June 2016 with the following statement:

“Thank you for your question and I appreciate your efforts for reaching an agreement on the issue. However, Finland is not able to support the Commission’s view. The discussion on this difficult issue really has been controversial years ago. There is no change in Finland's position in this issue.

The Swedish population has created a risk for the wild population and in the worst case it can jeopardise all the efforts put on the protection of the wild Fennoscandian population. The risk is now even more evident when the wild population is showing good progress due to concerted conservation efforts among the range states and when on the other hand restocking of Swedish population has been reinitiated. The issue has been long discussed at the scientific level and I'm sure the Commission is well aware of the main points of these severe concerns. Just to clarify our position I repeat here the main arguments:

- The genetic structure of the Swedish population originating from captive-bred birds is a mixture of western and eastern types, with introgression of genes from other species, Greater white-fronted goose and Greylag goose. The use of Barnacle goose as foster parents has led to hybridization also between these two species. Also second-generation hybrids have been recorded. Therefore, the Swedish population forms a direct and severe genetic threat to the wild Fennoscandian population in result of contacts either in the breeding grounds or along the migration routes. The problem has not been solved with the latest attempts to use the Russian origins for the captive-bred birds.

- The manipulation of the migration route of the "man-made" Swedish population has led to wintering areas and habitats, which are not the traditional ones for this species. Birds have even been seen staging and moulting in city parks with the Barnacle geese increasing the risk for hybridization between these species. The possible risk that the traditional migration route of the wild population would be disturbed by the influence of the Swedish geese should be taken seriously.

In brief, I want to emphasize that the conservation efforts made for the protection of a critically endangered, but still existing population, which is showing promising signs of recovering, should not be put in risk by a manipulated and introduced population, the genetics, behavior and ecology of which differ from the wild population. The action plan should be kept as it was previously; recognizing the Swedish population as a threat to the wild population”.

The message from Finland was supported by the other range states of the Fennoscandian population within the EU, following which a face-to-face meeting of the concerned EU member states has been convened by the Commission and is currently scheduled to take place in November 2016. At the meeting an attempt will be made to reach a coordinated EU position regarding the inclusion of the Swedish population in a future updated ISSAP.

Following the involvement of the EU Commission and the convening of the internal EU meeting in November, the AEWA Secretariat cancelled the plans for a negotiation meeting in Bonn. The agreement reached in Trondheim amongst all the range states present (including the Netherlands and Sweden) on the next steps regarding the revision of the Action Plan has in fact, been put on hold. Despite the effort to move forward on the issue of the revision of the International Action Plan by only concentrating on the LWfG populations listed under AEWA, the issue of the Swedish population has again managed to stall the process once again.

8. ADDITIONAL REVIEWS AND EXPERT OPINIONS

8.1 Review of publications on historical western European flyways of Lesser White-fronted Goose

Following the existence of conflicting views of Lesser White-fronted goose stakeholders on the previous existence of Lesser White-fronted Goose flyways within Western Europe, an independent expert review regarding the probability that the man-made migration route used by the Swedish reintroduced Lesser White-fronted Goose population was a traditional, natural migration route for the wild Fennoscandian Lesser White-fronted Goose population was commissioned by the RECAP Committee. The UNEP/AEWA Secretariat terms of reference for the work adopted by the RECAP Committee specifically requested critical reviews of the scientific papers by Kampe-Persson (2008), Mooij & Heinicke (2008) and Mooij et al. (2008). The review work was carried out by the British Trust for Ornithology (BTO) (Marchant & Musgrove 2011), and their main conclusions were as follows (important points from the Executive summary):

4 An important question now posed by the RECAP Committee is whether the western migration route ('Atlantic flyway') used by the Swedish population is a natural one, either recreated or augmented by the Swedish releases, as has been claimed in some recent literature, or an artificial one. This report reviews this question with the aim of giving advice to the Committee.

5 The review finds little evidence that such a migration route existed before the Swedish releases began, although it might have done so, dying out before European ornithology had developed sufficiently to record it. This is in contrast to a recently published paper which states unequivocally that the traditional migration routes of the Scandinavian population were well separated from those of the North Fennoscandian population.

6 The case for the western migration route being a natural one seems to rest largely on the several hundred records of LWfG that exist for western European countries prior to 1981, rather than on evidence of how those birds reached western Europe. The main alternative explanation for the presence of these birds, which we support, is that they were diverted from their Central European migration route by being caught up with Greater White-fronted and Bean Geese moving southwest towards western Europe.

7 In Britain and perhaps some other western European countries outside the normal range of the current Swedish population, the large majority of LWfG now being recorded can almost certainly be accounted for by escapes from captivity. The first known British record of LWfG assigned to the escape category was in 1976, thus predating Swedish releases, but small numbers of escapes might have been present in Europe much earlier.

8 We feel that the question of whether the western migration route is a natural one or not should not be an overriding issue. The boundaries between natural and unnatural for goose movements and distribution are being blurred irrevocably by the presence of large and growing numbers of introduced and escaped geese in Europe.

9 *Every effort should be taken to increase the supply of captive-bred Russian birds suitable for release. While the supply of captive-bred LWfG is limited, they should be released where they have the best chance of joining a breeding population. The RECAP Committee needs to consider all its options carefully.*

These conclusions have, however, been interpreted by the stakeholders of continued reintroduction of Lesser White-fronted Geese as meaning there is a good possibility/probability that the human-modified migration route to the Netherlands is a natural one, and they have used this as an argument for further reintroductions using the method that is currently employed in Sweden. There is, however, no evidence, nor any clues that such a migration route has ever existed naturally. Similarly, evidence confirms that there have never been wintering areas for any original wild population of the species in the Netherlands neither in historical times nor in geological perspectives. See **chapter 3.2** for a thorough scrutiny of this issue.

8.2 Independent review on genetics

The work on a new and independent review on the genetics of the Swedish reintroduced Lesser White-fronted Goose population was commissioned to Prof. G. Amato by the AEWA Secretariat in 2009, again based on the Terms of Reference adopted by the RECAP Committee. Unfortunately, due to scheduling conflicts, Amato never completed the commissioned work, but he produced an executive summary that concluded as follows:

“At this point, starting new captive breeding populations from wild caught individuals – especially from the Fennoscandian subpopulation presents too great a risk to the demographic health of these declining populations. While there are methods to minimize the impact, the potential disturbance is not worth the risk. The exception might be very limited additions from the wild for the Western Main population. These individuals could be added to a satellite population of the Nordens Ark birds. Even a very few individuals, added over time would prevent selection for domestication and would help meet genetic retention goals for a captive bred population that would be available for multi-generational supplementation of the wild populations.

The captive populations of LWfG, other than the Western Main/Nordens Ark, should not be used for reintroductions. The free ranging LWfG subpopulation in Sweden, however, does not pose a significant threat to the recovery of the other subpopulations. For this reason no action needs to be initiated in terms of screening wild birds for evidence of hybrid genes or in removing birds from the ecosystem where they currently fill an ecological role. If additions are made to this population from captive individuals of the Western Main/Nordens Ark birds it will reduce even further any concerns about the initial release of birds with introgressed genes since this will help “swamp them out” with LWfG genotypes.

The Fennoscandian subpopulation in Norway is highly threatened by continuing low recruitment, and is highly vulnerable to stochastic disasters. As one of three geographically separated subpopulations, its loss would be a significant loss, and possibly endanger the LWfG species. Genetic data supports the hypothesis that these subpopulations have maintained connectivity in recent evolutionary history. For all of these reasons, a synthesis of conservation genetic research and theory would argue for the population augmentation of this subpopulation with individuals from the Western Main/Nordens Ark captive population”.

It is worth noting that Amato (2010) discussed the usefulness of using genetically pure birds to supplement the "wild population" in Fennoscandia in the original meaning of wild, i.e. the Fennoscandian Lesser White-fronted Goose population. In our view, the assumption that the release of new "pure" birds would swamp the existing hybrids in the Swedish population, although perhaps possible in theory, is extremely unlikely to occur in the wild. There are several explanations for this improbability, both as an effect of behavioural mechanisms through natural selection (and sexual selection), but also genetically (see **chapter 5.5**).

Particularly in light of the current release methods being used, it seems unlikely that:

- a) the released birds will survive to any extent (the survival rate to date is reported as very low);
- b) if they do survive, -that they actually follow the flock of Swedish free-flying Lesser-White-fronted Geese;
- c) if they follow the flock, that they find a suitable mate as the Swedish releases since 2010 have been mainly of males (see **chapter 5.7** for a detailed discussion on this) and in addition due to selective mating (of familiar ind.) which would favour birds from some age cohort and subpopulation;

In addition, the Swedish reintroduced population has, contrary to original wild Lesser White-fronted Geese seen in Fennoscandia and Russia, made the transition to feed on agricultural habitats/ farmland especially during winter in the Netherlands and Germany, a trait not shared by original wild Lesser White-fronted Geese (see **chapter 5.6.2** for details). Amato (2010) did not, however, consider (and possibly was not aware of) this aspect or other ecological problems (such as reduced viability, hybridization with Barnacle Geese and deviations in natural behavior) concerning the Swedish free-flying population at the time of producing the summary of his review.

8.3 Article on "documented" hybridisation of Lesser White-fronted Goose and Greater White-fronted Goose in the wild

In an attempt to trivialize the potential ecological problems caused by the hybrid individuals within the free-flying Swedish Lesser White-fronted Goose population, the stakeholders in favour of continued reintroductions published an article with the overall objective to prove that hybridisation between Lesser White-fronted and Greater White-fronted Geese occur in the wild (Nijman et al. 2010). The study located two presumed cases (two museum specimens) of hybrids between these species (Lesser White-fronted x Greater White-fronted Goose). The two samples mentioned in the study (museum specimens with references ZMA 19267 and BMNH 1936.2.18.1) could just as equally have been escapees from zoos or waterfowl parks in western Europe rather than wild geese. The fact that these two samples are collected in the Netherlands and in Great Britain makes it even more likely that these birds are of captive rather than wild origin. In Britain, more than 50% of all records of Lesser White-fronted Geese are presumed to be of feral/captive origin (see also **chapter 3.1.2**). The authors argued that the specimens were collected before the Swedish reintroduction project started. However, western Europe has, at least since the 1850s, experienced large amounts of both deliberate releases and unintentional escapes from zoos, wildfowl parks and other private collections, and hybrids between Lesser White-fronted Geese and Greater White-fronted Geese are known to have occurred in zoos at least since 1926 (see **chapter 4.8**, Nagy 1950).

A valid proof of hybridisation between these two species in the wild would be documentation of a mixed pair actually breeding together and producing viable young, or by conducting a genetic analyses of wild populations (of both species) within their normal distribution range.

In the discussion, the authors concluded that *“hybridisation between the two species occur naturally regardless of stocking programs. This perhaps happens infrequently, because 4% (2/47) of A. erythropus..... in the collections of the ZMA, BMNH and Naturalis are hybrids”*. We further question the scientific validity of this statement, as samples were not randomly selected from museum collections. Rather, apparent hybrids were selected first, thus increasing the proportion of hybrid individuals in the study. In order to make a valid analysis, all skins in European museums should have been included. These amount to at least 300 specimens (own unpublished data), of which the largest collections with native wild birds are located at the Natural History Museum in London (21 skins + 2 heads), Natural History Museum Gothenburg (24 skins + 2 mounted birds), Moscow State University Museum (30 skins), Zoological Museum in St. Petersburg (65 skins), Swedish Museum of Natural History, Stockholm (11 skins + 2 mounted birds), Natural History Museum, Oslo (4 skins + 8 mounted birds) and the Zoological Museum, Copenhagen (11 skins). In addition, it should be noted that hybrids have also been considered interesting to collect for museums, and they have therefore been very overrepresented in museum collections throughout Europe.

In addition, the authors claim to have measured 26 skins from the three museums they refer to (Zoological Museum Amsterdam, Leiden and Natural History Museum in Tring). These three collections held 8, 18 and 23 specimens respectively, but in the case of the specimens from the museum in Amsterdam none should have been used in the analyses since three were of captive origin, two were only heads and the three remaining specimens were immatures, not adults. In Tring, the 23 specimens consisted of 17 adults that could have been used, of which the remainder were juveniles/immatures and heads. In Leiden it is more difficult to assess the specimens, but at least 8 were pulli/immatures. At worst, probably only three of the specimens were of wild origin. Summing up the possible adults available, there were only 20 suitable specimens in total in these collections (see also see **chapter 5.5**).

Lastly, the mixed origin of the museum specimens – which were collected from Western Europe to the eastern fringe of the distribution in Asia (Burma, China and Japan) - would render such a small sample analyses impossible to test statistically, and therefore useless. This is because the sexes differ in size and there is a cline in morphology with increasing size from west to east in the Lesser White-fronted Goose, as is also the case for Bean Goose and Greater White-fronted Goose (Ely et al. 2005, Ruokonen et al. 2008).

In conclusion, due to the considerable methodological weaknesses, the article (Nijman et al. 2010) fails to prove that hybridisation has any relevance for wild Lesser White-fronted Goose populations and cannot be used as a guidance for management decisions for the reintroduced Swedish population.

Genetic research on wild populations of Lesser White-fronted and Greater White-fronted Geese clearly shows that hybridisation between these two species is not frequent and no incidences were recorded in studies containing more than 100 individual samples from original wild populations, and more importantly it has not lead to introgression. This is very different from the unfortunate situation documented within the Swedish reintroduced population, where a minimum of 36% of the sampled birds were contaminated with alien genes (Ruokonen 2001, Ruokonen et al. 2004, 2007, 2010).

It is important to note that this does not exclude the possibility that Lesser White-fronted and Greater White-fronted Geese might occasionally interbreed also in the wild, but so far, there is no proof of this. Kampe-Persson (2007) lists several cases of likely hybrids between these two species. The issue of hybridisation between the Lesser White-fronted Goose and Greater White-fronted Goose is further discussed in detail in **chapter 4.9**.

8.4 Additional advice from the IUCN Committee on reintroductions

In the Swedish National Action Plan (Naturvårdsverket 2011), the Swedish reintroduced population is described as a reinforcement of the existing wild Fennoscandian Lesser White-fronted Goose population, due to the claim that some wild Fennoscandian Lesser White-fronted Geese still existed in the reintroduction area when the releases started in the early 1980s. This view was opposed by the Fennoscandian Lesser White-fronted Goose conservation project, and the RECAP committee therefore asked the IUCN Committee on reintroduction for advice regarding the question whether to consider the Swedish population as a reintroduced or a reinforced/restocked population.

The IUCN committee on reintroductions agreed to define the Swedish reintroduced population as a reinforced/restocked population on the basis of the information provided by the AEWA Secretariat on behalf of the RECAP Committee (AEWA 2012, but see also AEWA 2011e). In order to make such a definition, not only the question as to whether there still were some wild Lesser White-fronted Goose left in the release area in the Arjeplog mountains in northern Sweden should have been considered, but also that the new, reintroduced population was manipulated to change several ecological traits compared to the wild Fennoscandian population. We consider that the IUCN Committee on reintroduction failed to evaluate this question, since important ecological and behavioural differences between the two populations in question were not subject to the evaluation. For a more thorough scrutiny of this question, refer to **chapter 5.3**.

8.5 Feasibility study for catching and refinement of the Swedish population

Following the recommendation of the CMS Scientific Council (see **chapter 6.2**) and the agreement reached by the AEWA negotiation mission (see **chapter 6.3**), the Swedish Environment Protection Agency (SEPA) agreed to undertake a feasibility study as to how the Swedish free-flying, reintroduced population could be caught and refined. This feasibility study was commissioned by SEPA and carried out by Richard Ottvall at the University of Lund, Sweden (Ottvall 2008). The report concludes that it is not “worth the effort” to follow the actions laid out in the existing International SSAP:

“The only known moulting site is at Lillfjärden, Hudiksvall where only few individuals have stayed in recent years during the moulting period (2008: 5 ind., 2007: 18 ind. and 2006: 5 ind.). From these figures probably less than 10% of the Swedish population can be caught at Lillfjärden during moult. This means that most catching efforts have to be directed towards staging localities. It is very difficult to assess the proportion of the population that can be caught at the staging sites, but it is probably correlated with the amount of efforts.

From this study I conclude that to capture Swedish Lesser White-fronted Geese for genetic screening and refinement by removal of apparent hybrids is a pointless action and not feasible. This conclusion is based on the fact that present genetic markers are not efficient in detecting hybrid ancestry among individuals in the Swedish free-flying population. I endorse the genetic experts that argue that the best-available technology will not exclude carriers of alien (GWfG) genes. It is possible to develop further genetic markers, another 40 or so microsatellites, in a well-equipped lab to a cost of at least 1 million SEK. This work will probably take about a year to finish. Most likely, such an effort will still not guarantee by 100% certainty that carriers of alien genes will be detected by genetic screening.

It might be possible to capture a large fraction of the free-flying flock, but the amount of efforts and costs are difficult to predict. The catching efforts have to be implemented at several localities by using various catching techniques. Moreover, catching attempts will most likely have to carry on for several years until a fair number of birds have been caught. If geese are to be kept in captivity until the

outcome of DNA analyses is presented, I argue that a new facility for the geese has to be built. The total cost of keeping birds in captivity could well be 2-3 million SEK and to that costs of capture attempts of at least 500,000 SEK should be added. In total, I estimate that 3-5 million SEK is needed to cover all costs of actions. It is, however, doubtful whether the refinement process will be successful with all these actions". (Ottvall 2008).

The conclusion is quite surprising, because catching of moulting Lesser White-fronted Geese from the Swedish reintroduced population e.g. in the city park in Hudiksvall would probably be easy as compared to catching of wild Lesser White-fronted Geese. Such catching efforts of wild Lesser White-fronted Geese have been carried out successfully in Fennoscandia as well as in Russia, both at spring and autumn staging sites, as well as in breeding and moulting areas. The relative tameness of Lesser White-fronted Geese at Hudiksvall, where they are accustomed to people and allow close approach, makes it possible to capture individuals with a hand-held hoop-net. Furthermore, we do not consider the estimated cost of 1 million Swedish Krona (SEK) for developing suitable genetic markers as a good argument for not taking the responsibility and carrying out the actions described in the AEWA ISSAP. The current activities of annual releases of Lesser White-fronted Geese in Sweden is surely also a costly activity.

Sweden decided at an early stage to continue their release project despite concerns and criticism about the genetic composition of the free-flying population. Taking into account the precautionary principle and the potential threat that this population poses to the original wild Fennoscandian population which is only slowly recovering, we consider it an obligation for the Swedish reintroduction project to implement the necessary actions to catch and refine the free-flying population created as outlined in the AEWA ISSAP. At the time of writing (late October 2016), attempts have been made to capture the Swedish Lesser White-fronted Geese on several occasions from 2010 onwards.

A total of 16 moulting Lesser White-fronted Geese were caught at a site in Sweden on 10th July 2010 (*Projekt Fjällgås* 2013). At that time there were 31 birds at the same moulting site. In other words, just over 50% of the birds moulting at a single site in Sweden were captured and ringed on that date, and the total caught was around 32% of the total Swedish population at the time. The second attempt to catch geese from the population was made in the Netherlands in March 2014, and the third attempt was made at Lillfjärden, Hudiksvall in Sweden in September 2014 (German Goose Research 2016a). These last two attempts failed, the attempt at Hudiksvall at least was unsuccessful due to problems with the catching equipment. A fourth attempt, made at Hudiksvall in spring 2015 was successful, with three adults being captured and subsequently fitted with satellite transmitters (*Projekt Fjällgås* 2016). In late April 2016, two further successful catches of Lesser White-fronted Geese were made at Hudiksvall. The first of these two catches was specifically aimed at recapturing a female bird experiencing problems with its satellite transmitter, whereas the second of these catches resulted in the capture of a new female which was fitted with a new satellite tag (German Geese Research 2016b).

Numbers of Lesser White-fronted Geese recorded in Hälsingland district, which includes Hudiksvall, have varied with up to a little over 100 geese present in some years (**Figure 50**). Numbers of birds in subsequent spring seasons are always lower than that of the preceding autumn. A similar pattern is found in the Uppland district, which is also much used by Lesser White-fronted Geese, with up to 70 individuals (**Figure 45**). Possible explanations for this include natural mortality, or that migration is staggered and not all individuals are picked up during counting in spring. Perhaps most surprising is the fact that numbers of Lesser White-fronted Geese at Hudiksvall and elsewhere in Hälsingland have been in decline since 2012 (**Figure 44**), despite the fact that more birds are being released. The same

trend is also shown for the maximum counts in Uppland district, where the birds are mainly observed around Hjalstaviken (**Figure 51**).

There are several methods available to capture Lesser White-fronted Geese at Lillfjärden. The first Lesser White-fronted Geese return to the area to moult in late June. During the moult period these birds are completely flightless. Flightless geese seek the safety of water as a response to avoid predation. Birds can be rounded up by pushing them gently with boats or canoes to shore and enclosing them in a coral-type trap. With luck, one can successfully round up all the Lesser White-fronted Geese present in one single catch. This method is much used to catch large numbers of moulting geese (Ogilvie 1978).

Numbers of moulting Lesser White-fronted Geese at Hudiksvall do, however, vary with 0, 1, 29 and 28 moulting individuals reported in summers 2011-2014 respectively (Liljeback et al. 2012, 2013, 2014). In 2015, there were 34 individuals present at Hudiksvall on 29th July, all of whom had primary and secondary feathers at a growth stage indicating that they had probably all moulted there (own obs.). According to the Swedish Species Observation System (Artportalen 2016) there were up to 28 individuals moulting in 2015, which is slightly under that observed on 29th July.

Alternative methods that could be used to capture birds include the use of a whoosh-type net or perhaps cannon net – these two net-types can also be effective for catching free-flying birds at feeding or resting sites. There may also be other sites where it is possible to attempt to catch Lesser White-fronted Geese in Sweden.

There is a pressing need to capture the Swedish Lesser White-fronted Geese for screening to examine the genetic make-up of the birds at large. Although the birds released since 2010 are genetically pure and are from a stock captured in the wild in Russia, there are still many birds at large from previous releases. There are also serious doubts that the individuals released after 2010 have actually bred with the existing free-flying population, thus any dilution effect has probably not occurred. These early releases included birds with haplotypes from Greater White-fronted Geese (see **chapter 5.5** in this report).

Birds caught should to be screened for Greater White-fronted Goose haplotypes. Ideally, these individuals should not be released into the wild after capture, regardless as to whether they have confirmed genes from Greater White-fronted Geese or not. This is because these birds (at least from releases from 2010 onwards) have no regular, natural migration route and spread in all directions, thereby posing genuine threats to the wild Fennoscandian population (see **chapter 5.2.4** for details on the effects of releasing birds without a traditional migration route).

It is highly improbable that one can catch all the Lesser White-fronted Geese circulating in Sweden in one single season. Indeed, not all the Swedish Lesser White-fronted Geese use Hudiksvall, either to moult or to stage on route to wintering areas. However, with maximum annual numbers at Hudiksvall between 37 and 104 individuals at one time in the period 2010-2015 (data from Artportalen.se 2016) then there is a potential to capture a large proportion of all Lesser White-fronted Geese that are currently in circulation from Swedish releases. Whether or not the Swedish fieldworkers see any incentive in this is a matter of conjecture, but efforts to capture the free-flying Lesser White-fronted Geese are essential to prevent the risk of these birds mixing with wild Fennoscandian birds. If the Swedish fieldworkers are unwilling to capture these birds, then catching could be carried out by other professional personnel.

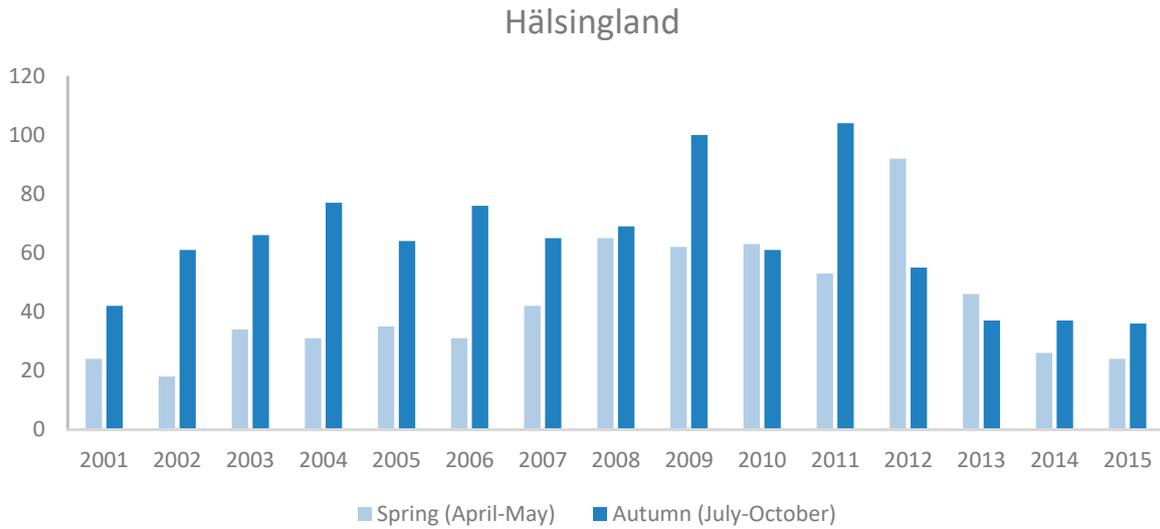


Figure 50. Maximum numbers of Lesser White-fronted Geese reported in spring (April-May, pale blue columns) and autumn (July-October, dark blue columns) in Hälsingland district in Sweden 2001-2015. Most of the counts are from Hudiksvall. Source: Artportalen 2016.

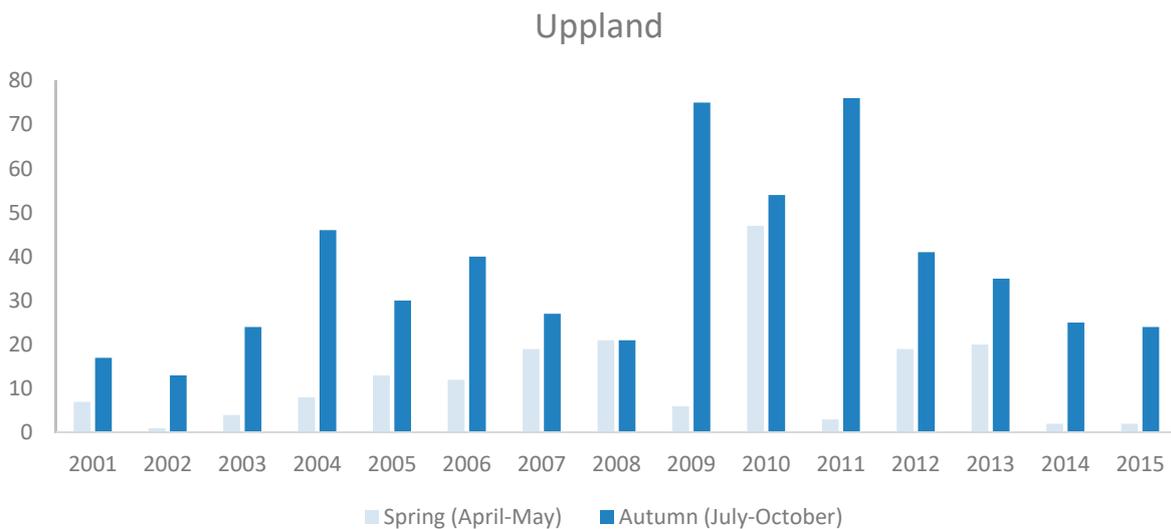


Figure 51. Maximum numbers of Lesser White-fronted Geese reported in spring (April-May, pale blue columns) and autumn (July-October, dark blue columns) in Uppland district in Sweden 2001-2015. Most of the counts are from Hjälstadviken. Source: Artportalen 2016.

8.6 Feasibility study for a supplementation in Norway

In 2009, the Norwegian nature conservation authorities commissioned a feasibility study for a re-introduction/supplementation programme for Lesser White-fronted Goose in Norway (Lee et al. 2010). The report outlines ten feasibility criteria for a successful reintroduction/supplementation programme, and it concluded that a supplementation of the Lesser White-fronted Goose population breeding in Norway can only be considered feasible assuming the identified problems with regard to obtaining a source of birds and release technique can be overcome:

“A re-introduction programme for LWfG in Norway (following extirpation of the species in the wild) sufficiently fulfilled seven of the ten feasibility criteria. The criterion regarding causes of decline was not fulfilled, and criteria regarding knowledge of a suitable release techniques and stakeholder support were only partially fulfilled. Accordingly, these factors may present significant difficulties. Evidence suggests that if the original causes of decline have not been eliminated or sufficiently reduced, it would critically limit the success of a re-introduction programme. It may be difficult to gain support for a re-introduction that would require human-led release to establish migratory habit, and while human-led release is likely a suitable release technique, the technique has had limited success establishing migratory habit in geese and is unproven for LWfG. The report concludes that a re-introduction of LWfG in Norway cannot be considered feasible until further evidence is provided concerning the elimination of or sufficient reduction in the original causes of decline, and then only assuming the identified problem with regard to stakeholder support and release technique can be overcome” (Lee et al. 2010).

With this background, the Norwegian Environment Agency started a pilot project with releases of captive bred Lesser White-fronted Geese supplied from “Nordens Ark” in Sweden. The project released a total of 11 Lesser White-fronted Geese in 2010 and 2011. See **chapter 4.5** for more details.

8.7 Swedish National Action Plan for Lesser White-fronted Goose

The process of preparing a National Action Plan for Lesser White-fronted Geese in Sweden started already in 2004, and was coordinated by the Environmental department of the County Governor of Norrbotten in Sweden. On 8th February 2005, the first draft was circulated as a working document for a hearing held in Luleå in Norrbotten County in Sweden on 15th February that same year. On 15th December 2005, the draft was revised according to the views of SEPA as well as to the conclusions and recommendations of the CMS Scientific Council (see **chapter 6.2** for details). On 30th March 2006, the draft was further revised, and on 7th October 2006 the final revision was made. On 11th and 12th December 2006, a second hearing meeting was held in Älvsbyn, Norrbotten, and on the 19th November that same year, a second official draft of the Swedish NAP was circulated as a consultation document for the final hearing process. This document contained a background description of the history of the Lesser White-fronted Goose in Sweden that was in line with the understanding of the other range states hosting the original wild Fennoscandian population. This draft also described several conservation actions for the original wild Fennoscandian Lesser White-fronted Goose population which would have been in line with the AEWISSAP which was being negotiated at that time and which was adopted in 2008. The Swedish draft NAP was the result of a comprehensive and broad process involving stakeholders from both Sweden and neighbouring countries and was founded on acknowledged research, available knowledge and literature on the species (Naturvårdsverket 2006).

In this hearing document, the goals were outlined as follows (translated from Swedish):

- Clarification of the occurrence and possible breeding of the Fennoscandian population by 2007 at latest.
- Knowledge of the distribution of the reintroduced birds by 2008 at latest.
- Destruction of geese in captivity in Sweden revealed to carry genes of Greater White-fronted or Greylag Geese by 2007 at latest.

- Commencement of the creation of a new stock for captive breeding which is built up firstly of Norwegian birds and secondly of western Russian birds, by 2007 at latest.
- Determine which sites in Sweden ought to be subjected to protection, restoration or habitat management by 2007 at latest.
- Reach a consensus as to how the results of genetic studies ought to be implemented in conservation work and which measures ought to be taken as recommended by the Scientific Council by 2008 at latest.
- Identify potential sites for biotope protection, release pens etc. for reintroducing Lesser White-fronted Geese with a suitable genetic background (see above) by 2008 at latest.
- The negative trend for Fennoscandian population has turned by 2008 at latest.
- The necessary measures or actions for sites that ought to be protected, restored or managed should be in place by 2010 at latest.
- The Swedish breeding population numbers 25 pairs by 2010 at latest.

Long-term aims

- Hunting of Lesser White-fronted Geese is no longer a threat by 2015 at latest.
- The population of Lesser White-fronted Geese in Sweden has achieved a favourable conservation status with a breeding population of at least 200 pairs by 2025 at latest.
- Lesser White-fronted Geese in Sweden are part of a growing distributional range together with other populations of Lesser White-fronted Geese, by 2025 at latest.

Suggested actions:

- Annual monitoring of staging Lesser White-fronted Geese, including via the Species Reporting System (Artportalen).
- Annual counting of Lesser White-fronted Geese in the release area in Norrbotten, Västerbotten.
- Inventory of Lesser White-fronted Geese in known breeding areas with recent indications of breeding.
- Documentation of the Swedish Association for Hunting and Wildlife Management's Lesser White-fronted Goose project.
- Import of wild Russian birds for breeding.
- Import of wild Norwegian birds for breeding.
- Holding of breeding birds in captivity – Öster Malma
- Establishment of breeding facilities – “Nordens Ark”
- Holding of breeding birds in captivity – “Nordens Ark”
- Selection, restoration and management of staging and moulting sites along flyways.
- Investigate the prospects for survival of the Fennoscandian population and its expansion to Sweden.
- Investigate the prospects of survival for the reintroduced population.
- Investigate various release methods.
- Investigate the legal, practical, economic and ethical consequences of capturing and/or destroying the Swedish reintroduced population in accordance to the recommendation of the Scientific Council.
- Compile knowledge on the ecological requirements of the Lesser White-fronted Goose.
- Protection of important sites for Lesser White-fronted Geese.

- Communication to the authorities in countries with staging or wintering Lesser White-fronted Geese.
- Participation in international work on Lesser White-fronted Geese.
- Final report on genetic studies carried out in Sweden.
- Annual meeting with Nordic bodies working on Lesser White-fronted Geese (Sweden, Norway, Finland).
- Destruction of hybrids.
- Information to hunters in Sweden.
- Create a website on work on Lesser White-fronted Geese.

Unfortunately, for reasons unknown, this NAP process stopped. Then, nearly four years later, on the 5th October 2010, a new draft was circulated as a consultation document by SEPA. This draft document had little in common with the previous draft from 2006, and in 2011 the Swedish authorities published the National Action Plan (NAP) for the Lesser White-fronted Goose in Sweden (Naturvårdsverket 2011). Despite critical comments and concerns expressed both by the BirdLife partner in Norway, the national nature conservation authorities both in Norway and Finland as well as the AEWA Secretariat (in particular regarding the discrepancies with the 2008 ISSAP), none of the expressed worries or critical comments contributed to any amendment of the draft, and it was finally published with very few changes in May 2011.

As indicated above, the current Swedish National SAP is not in line with the AEWA ISSAP which constitutes the agreed international conservation framework for the species, and the actions outlined therein mainly concern the Swedish reintroduced population, but without distinguishing between original wild and reintroduced populations in the description of the species.

The Swedish NAP uses the decreasing trend of the original wild Fennoscandian population as a justification for the continuation of the reintroduction following the method currently being used. The main goal of the NAP is the growth and expansion of the Swedish reintroduced population, and no actions are outlined to prevent the Swedish population from mixing with the wild Fennoscandian population. In fact, in direct contradiction to the concerns and goals of the other range states to the Fennoscandian population and the ISSAP, SEPA seems to be strongly in favour of the two populations mixing in the wild, apparently with no regard for the possible threats this poses to the original wild Fennoscandian population.

The Swedish NAP uses the high hunting mortality along the migration routes of the wild Fennoscandian Lesser White-fronted Geese as an argument in favour of continuing activities to increase the population that uses the human-modified migration route and wintering areas. On the other hand, the Swedish NAP also states that if the hunting problems can be solved, the choice of the human-modified migration route may be reversed. The latest results from the conservation actions for the Fennoscandian population show that the hunting problem can be mitigated. In addition to the enhanced management of hunting and poaching along the migration routes, the securing of egg clutches of the breeding Lesser White-fronted Geese in Norway has been shown to be a key factor to alleviate the hunting problem. The Lesser White-fronted Geese moulting in the Fennoscandian breeding areas (with their broods) will not choose the easterly (and dangerous) migration route (see **chapter 3.1** for a detailed explanation), but instead migrate to Greece via Hortobágy in Hungary (which is a fully protected area) (Ecsedi et al. 2009). On this migration route there is only one stopover site in Russia (the protected area - Shoyna Zakasnik) on the Kanin Peninsula that was established after the Fennoscandian Lesser White-fronted Goose population was tracked to this area by satellite telemetry in 1995 (Aarvak et al. 1998). This site holds significant numbers of the Fennoscandian population for a short period in autumn (Tolvanen 1996), and hunting is not currently

considered to be a problem at this site. We therefore would like to see this fact taken into account in the further process of updating both the Swedish NAP as well as the ISSAP.

Throughout the document, the authors of the Swedish NAP have rewritten the common knowledge about Lesser White-fronted Geese and presented definitions as well as facts that are in direct contradiction to what has been agreed by the other range states in the AEWA Lesser White-fronted Goose International Working Group. While it is true that the original Swedish Lesser White-fronted Goose population was part of the wild Fennoscandian population, the present Swedish reintroduced population can by no means be defined as belonging to the original wild population (see **chapter 5.3**). The fact that (and if so, contrary to the statements of the Swedish project itself in the 1980s and early 1990s) some few individuals of wild Fennoscandian Lesser White-fronted Geese remained in the reintroduction area in the early 1980s, it does not change the fact that the present Swedish free-flying population is a separate reintroduced one, as discussed in more detail in **chapters 4.1, 5.1, 0** and 5.4.

The Swedish National Action Plan (NAP) – and to a certain degree also the 1st consultation draft of the AEWA ISSAP circulated to range states in 2013 (see **chapter 7.1**) – redefined the Swedish free-flying reintroduced population as reinforced, instead of reintroduced. We consider this conception to be an erroneous interpretation of scientific facts, in order to improve the acceptability of the reintroduction of Lesser White-fronted Geese in Sweden. The Swedish reintroduction project which took place in the 1980s and 1990s was confronted by the Norwegian Lesser White-fronted Goose conservation project, because wild Fennoscandian Lesser White-fronted Goose still bred on the Norwegian side close to the mountain area of Lesser White-fronted Goose releases in Sweden (Svaipa Nature Reserve in the Arjeplog mountains). When the worries were expressed that a small part of the Fennoscandian population at the time still could be breeding close to the reintroduction area, thus posing the risk of being “swamped up” in the reintroduced population, *Projekt Fjällgås* provided assurances that the reintroduction was carried out in an area where wild Lesser White-fronted Geese were extinct. Regardless of the political motivation of redefining the reintroduction as a supplementation, it is undisputable that the Swedish population is fundamentally different from the original wild Fennoscandian population regarding the genetics, population demographics, migration route and behaviour during migration and moulting. Even the habitat preferences and the feeding ecology of the Swedish reintroduced birds are different to the original wild populations of Lesser White-fronted Geese (see **chapter 5.6.2** for details). The Swedish reintroduced population does not show the typical characteristic of wild populations of Lesser White-fronted Geese, namely that of being a habitat specialist during migration and wintering, and thus it is the only *Anser*-species dependent on natural low growth steppe and saltmarsh habitat.

It is also noteworthy that the Swedish National Action Plan has omitted all references to the publications from the early phases of *Projekt Fjällgås*, where it was scientifically well documented and clearly described that the project was a reintroduction. It was clear from the start that the sole idea of using Barnacle Geese as foster parents was to alter the migration route away from the species’ traditional (natural) distribution area.

There are some further interesting points to be aware of considering the Swedish Lesser White-fronted Goose NAP:

- The Swedish Lesser White-fronted Goose NAP includes no data showing the development in the Swedish reintroduced free-flying population, but describes in detail the status of the original wild Fennoscandian population.
- The Swedish Lesser White-fronted Goose NAP presents no information about the high hybridisation rate between the reintroduced Lesser White-fronted Goose population and

Barnacle Goose, which in the period 2004-2014, hybrids in numbers accounted for 14.6% of the total Swedish Lesser White-fronted Goose population (see **chapter 5.2.6** for details).

- The Swedish Lesser White-fronted Goose NAP presents a thorough argumentation for the existence of a natural Lesser White-fronted Goose migration route to the Netherlands, although this is evidently not true (see **chapter 3.2** for details).
- In the chapter on experiments with ultra-light aircraft in 1999, the Swedish Lesser White-fronted Goose NAP states that (page 31): *“Most birds were re-caught when they returned to the locality where they were released, though a small number avoided being caught and remained free”*. This is not the truth, as only 12 birds (40%) were re-caught and the majority remained free (see **chapter 4.3** for details).

The Swedish NAP also states that Swedish authorities do not consider the past introgression of Greater White-fronted Goose genes into the reintroduced population as a major problem. In our opinion, the Swedish Lesser White-fronted Goose NAP in its current form is to be considered only as a political statement presenting suitable data and leaving out undesirable data, with the aim to justify the existing reintroduction project and to trivialize the impact of the documented problems with the Swedish reintroduced population. By making its own definitions and hiding essential facts, the Swedish NAP contributes in blocking international efforts in saving the original wild Fennoscandian Lesser White-fronted Goose from extinction.

9. CONCLUSION AND RECOMMENDATIONS

The negative consequences of releasing captive-bred birds into the wild can be considerable. There are several forms of release in current use, and the definitions of these are summarised in this current report. Birds may be released for conservation, for ornamental or for economic purposes. Here we have examined the consequences of releases of Lesser White-fronted Geese into the wild. There have been many releases since the first ones took place in 1981, and a number of different methods have been used.

The intention of all of the release projects has been to increase the number of Lesser White-fronted Geese in a given area, or to re-establish a breeding population where it has disappeared. Some of these release projects have involved manipulation of the migration route and wintering areas for the geese, and some planned projects that have not been started at the time of writing have also intentions to manipulate both the routes that the Lesser White-fronted Geese fly, their staging areas and their wintering areas. The intention of altering which areas are used by geese has been to take the released birds to areas which are considered safer than those used by their wild conspecifics. However, the former as well as the current (and planned) release projects do not solve the issue of safeguarding the existing wild Fennoscandian population of Lesser White-fronted Geese. On the contrary, releases of Lesser White-fronted Geese have instead presented new elements, which may threaten the very survival of the remaining wild population of Lesser White-fronted Goose in Fennoscandia. By implementing measures to help safeguard the small population of breeding Lesser White-fronted Goose in Fennoscandia, such as safeguarding of sites used and by improving breeding conditions and adult survival using predator control, then the wild Fennoscandian population is currently on the increase and is slowly reoccupying areas with its former range where it has been absent for many years.

Former and current release projects threaten the existing wild population in many ways. Released birds are occurring within the range of the wild Fennoscandian population. The negative effects posed by these released birds upon the wild population include:

- Birds from previous release projects and which carry genetic material from other goose species (Greater White-fronted and Greylag Geese) were never culled, and these birds and/or their descendants are currently at large. There is a real risk of genetic regression following contact between wild Lesser White-fronted Geese and birds of poor genetic make-up. Continued releases of birds into the Swedish reintroduced population does not have only the effect of hopefully diluting the amount of alien genes in the population, but has also the intention of increasing the Swedish reintroduced population.
- Released birds with a deviant behaviour and with a different migration route compared to wild birds may follow the wild birds, or alternatively the wild birds may follow the released birds. Such change in site usage would result in the wild population using sites that are not within the natural flyway for the wild birds. An exodus of birds from the wild population following emigration to the sites used by the released birds could be detrimental to the wild population.

There are a number of ethical issues to releasing Lesser White-fronted Geese into the wild, not least to releases of birds without any parents or foster parents. These negative effects include:

- Birds that are released lack the social skills necessary for survival in the wild that they would learn from their parents.
- Birds that are released without parents disperse in all directions from their release sites, and therefore are a serious risk if they enter the wild population.

The conclusions of this critical review are that releasing Lesser White-fronted Geese is not a solution to the problems faced by the wild population, but that such releases is an additional burden upon the wild population. The best way to safeguard the existing wild population of Lesser White-fronted Geese and to ensure it attains a more favourable conservation status is to continue the management regime currently in place in areas where the wild Fennoscandian population occur (breeding, staging and wintering sites). Releasing Lesser White-fronted Geese does not help to safeguard the wild population, but rather there is very good evidence that the release projects are jeopardizing the continued existence of the Lesser White-fronted Geese as a wild bird breeding in Fennoscandia and staging and wintering in traditional areas.

As the Fennoscandian population is currently increasing at an annual rate of 15%, then there is a good chance that the species may naturally recolonise the former breeding areas in Sweden and Finland. The desired scenario included in both the Norwegian and the Finnish national action plans for the Lesser White-fronted Goose is that the species will recolonise its former breeding areas within the scope of the next ten years. The unfortunate consequences of the wild birds coming into contact with the released birds in terms of altered behaviour, altered site usage, change in habitat use, genetic introgression and reduced viability are serious threats to the existence of the remnant wild population of Lesser White-fronted Geese.

Changes have been proposed to alter the status of the Swedish population in the current draft International Single Species Action Plan for the Lesser White-fronted Goose. Such a change of status would pave the way for more birds to be released. If the releases are stopped now, then the majority, and perhaps all, of the released Lesser White-fronted Geese in Sweden would gradually disappear as we have shown in this report that they have a low annual survival, that mortality of the released birds is high, and that the return rate to the natal area is low. By stopping releases of birds immediately, then the risk of the wild population coming into contact with the released birds can be greatly reduced and perhaps even eliminated.

The Fennoscandian Lesser White-fronted Goose conservation project considers an increase in the size of the Swedish reintroduced population as an increased potential threat to the wild Fennoscandian population. It will therefore incur a major contradiction to continue actions to increase the Swedish reintroduced population side by side with actions for the wild populations in the International Single Species Action Plan (ISSAP).

If adopted in 2016, a possible renewed ISSAP would be operable for 10 years. The Norwegian National Action Plan for the species has as a goal to reach 1,000 individuals within the same timescale. An International SSAP that is not clear in addressing the genetic and ecological problems and possible threats from the Swedish reintroduced population will be an obstacle, rather than a means to reach the conservation goals.

In the opinion of the Fennoscandian Lesser White-fronted Goose project, there are two acceptable options to move on with the work on the ISSAP as we can see it from the:

1. Address the genetic and ecological problems of the reintroduced populations in an updated ISSAP in a similar way as in the 2008 ISSAP.
2. Limit the focus of an updated ISSAP to original wild Lesser White-fronted Goose populations only.

A third option would be not to update the action part of the ISSAP at all, unless unanimous views can be reached. However, Sweden is not following the current ISSAP either so there does not seem to be any reason to continue with a plan that includes the Swedish reintroduced population. There are no

guarantees that Sweden will in fact follow a new action plan which has not been modified specifically to meet their goals. The input from Sweden in the process of updating the ISSAP has delayed the update process for several years. As the current ISSAP from 2008 is still valid unless replaced by an updated plan, this would be an option to consider. In that way we can avoid a further process, where Sweden is involved and which probably would further delay the update process. It is important to stop this practice, which for many years has taken up much of the time of both management authorities and research/conservation projects which are working towards the goal that the wild Fennoscandian population of Lesser White-fronted Geese can again recolonise its former haunts – both in Finland, Sweden and Norway.

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Appendix A - Letter from Hans Meltofte, ICBP, dated 23.12.1988

ICBP-Danmark
att. Jon Fjeldså
Zoologisk Museum
Universitetsparken 15
DK-2100 København Ø

23.12.1988

Til ICBP-Norge, -Sverige og -Finland
samt styremedlemmerne af Skandinavisk Ornitologisk Union

Kære venner,

På SOU's sidste møde i København den 22. oktober d.å. besluttedes det at søge at få startet et fællesnordisk projekt for udredning af årsagerne til dværggåsens nedgang i Nordskandinavien med henblik på at kunne få gang i beskyttelsen af den oprindelige bestand. Dette skal ikke ses som et angreb på det nuværende svenske "Projekt fjellgås", men tvært imod så vidt muligt foregå i samarbejde med dette. Dog håber flere af os, at man vil udskyde udsætningen af flere opdrættede dværggæs indtil det har vist sig, om vi kan redde den naturlige bestand.

Som medlem af forretningsudvalget i ICBP's europæiske sektion har jeg overvejet at forelægge det vedlagte resolutionsforslag ved sektionens møde i Tyrkiet nu til maj. Jeg vil derfor være meget interesseret i synspunkter på resolutionen - både positive og negative - for om muligt at kunne forelægge den i bred enighed.

mange hilsner
og ønsket om et godt nytår

Hans.
Hans Meltofte

Proposal

The ICBP conference of the European continental section held in Adana, Turkey, 16-20 May 1989

- expresses its appreciation for the great concern and efforts the Swedish Hunters Association is showing to save the dwindling population of Lesser White-fronted Geese in northern Scandinavia,
- at the same time is concerned by the fact that no comprehensive studies has been initiated to establish the key factors responsible for the decline,
- also sees some risk that the artificial population raised by Barnacle Goose foster-parents and thereby induced to migrate to North-west Europe in winter - if successful - will compete with the remaining wild population and thereby put them under further pressure,
- recommends that a study on the problems of the Scandinavian population of Lesser White-fronted Geese is made throughout its annual cycle, and in cooperation between all organisations and institutions concerned with and responsible for the safeguarding of this highly endangered population,
- and further recommends that all possible efforts to save the natural population is made before further introductions of artificially reared birds are carried out,
- wants to point out that the artificial rearing and reintroduction of a new population can not be considered an urgent matter, as long as many Lesser White-fronted Geese breed in bird parks in Europe,
- and finally wants to offer the full support and help of ICBP to save the Scandinavian population of Lesser White-fronted Geese in cooperation with all interested parties whether on the breeding grounds, at the staging areas in eastern Europe or on the badly known wintering grounds somewhere around the Black Sea.

Appendix B - Letter from Danish Ornithological Society dated 16.11.2005

KOPI
TIL ORIENTERING

Naturvårdsverket
Blekholmsterrassen 36
S-106 48 Stockholm
Sverige

16. november 2005

Udsætningsprogram og ændring af trækrute for Fjällgås (*Anser erythropus*) i Sverige

Dansk Ornitologisk Forening (DOF) er blevet bekendt med at Naturvårdsverket har givet tilladelse til endnu et nyt udsætningsprogram for Fjällgås (*Anser erythropus*) i Sverige. Projektet indebærer udsætning af 25 gæs i 2006 og eventuelt også i 2007. Gæssene skal have indlært en helt ny og for denne art helt unaturlig trækrute over Danmark og Tyskland til Nederlandene.

DOF vender sig kraftigt imod dette projekt. Foreningen har stor sympati for gode initiativer der kan hjælpe den naturlige bestand af Fjällgås i Skandinavien, men DOF mener ikke at det nu tilladte projekt er egnet hertil. Med en eventuel ny population af SW-trækkende Fjällgås vil der med stor sandsynlighed kunne ske en udkonkurrering af den meget sårbare, lille bestand af rigtige Fjällgæs med naturligt trækmønster mod sydøst til vinterkvarterer i Sydøsteuropa og Asien.

I Danmark er der bred enighed blandt alle interesseorganisationer i Vildtforvaltningsrådet (under Miljøministeren og Skov- og Naturstyrelsen) om at ophjælpning af truede arter kun i undtagelsesfald bør ske ved reintroduktionsprojekter, og aldrig således at det ændrer arternes naturlige adfærd eller trækmønstre. Vildtforvaltningsrådets natursyn kan læses her: <http://www.skovognatur.dk/Emne/Jagt/Vildtforvaltning/Vildtforvaltningsraadet/Dokumenter/Natursyn.htm>

Det er DOF's klare opfattelse at udsætningsprogrammer der konkret berører andre landes naturforhold og fuglebestande, kun bør gennemføres hvis det er forhandlet og aftalt med de berørte landes myndigheder. DOF vil derfor gerne henstille til Naturvårdsverket, at der snarest muligt gennemføres en høringsproces der involverer alle de lande og parter der berøres af det aktuelle projekt. Det gælder ikke mindst de danske naturmyndigheder der må forventes at blive berørt enten ved flyvningen med gæssene fra Sverige til Nederlandene eller når de udsatte Fjällgås i de kommende år selv skal finde vej til og fra udsætningsområdet i Sverige.

Med venlig hilsen
Dansk Ornitologisk Forening
BirdLife Danmark

Christian Hjorth

Christian Hjorth
Formand

Knud N. Flensted

Knud N. Flensted
Biolog

Cc:
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Dansk Ornitologisk Forening



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BirdLife
INTERNATIONAL

Appendix C - Letter from Norwegian Directorate for nature management dated 30.04.2004



Directorate for **Nature Management**

The Swedish Environmental Protection Agency

Your ref.:

Our ref.:
04/2272 ARTS-AM-ME
File Key:
444.24

Date:
30.04.2004

NORWEGIAN POSITIONS CONCERNING CONSERVATION OF THE LESSER WHITE-FRONTED GOOSE

The Norwegian Directorate for Nature Management (DN) expresses concern with regard to the present situation for the conservation of the Fennoscandian population of Lesser white-fronted goose *Anser erythropus*. DN regrets that we still have not achieved a joint understanding that could pave the way for common priorities to secure the survival of the endangered population.

For several years there has been uncertainty and concern about genetic aspects of the Swedish reintroduction project as well as the Finnish captive stocks of Lesser white-fronted goose. As it has been documented that the genotype of these birds represents a blend of different populations and also another species (White-fronted goose *Anser albifrons*), we fear that this could have unintended and serious consequences on the wild population.

These findings highlight the need for a sound knowledge basis, thorough assessments of risks and consequences and international/regional consensus on principles and practice prior to introduction programmes. Norway supports the International Action Plan developed for the European Commission in 1996, and consider this as a common European platform for conservation work in addition to internationally developed principles for protecting endangered species/populations and translocation/reintroduction of species.

In view of the present situation and with respect to the on-going debate on conservation strategies and actions, DN maintains a restrictive attitude to reintroduction schemes and manipulation of populations of this migratory species, and we request the Swedish Environmental Protection Agency (EPA) to take adequate measures to avoid that the introduced population will represent a threat to the remaining wild population.

As the Lesser white-fronted goose is regarded as a priority species in EU, the forthcoming discussions on priorities of conservation projects could be of vital importance to effectively safeguard the wild population in Europe. Since both BirdLife International and EPA have expressed their views, and there exist parallel conservation initiatives, we consider it important that the involved bodies clarify their positions on central aspects.

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We refer to your letters of 04.02.2000 to the Norwegian Directorate for Nature Management (DN) and 22.10.2003 to the European Commission (regarding LIFE projects for the conservation of Lesser white-fronted goose), and to other correspondence and contact on the issue.

Background

The situation for the Fennoscandian population of the Lesser white-fronted goose *Anser erythropus* has been very worrying for many decades. Considering the population that presumably inhabited the Fennoscandian mountain areas at the beginning of the 20th century, the current population of between 30 and 40 pairs constitutes a dramatic decrease. As a result of this development, the species is at present considered as the most endangered breeding bird species in Norway, and in the Nordic countries in general. The population level has shown a slight decrease through the last decade. The conservation status of the western and eastern main populations of Lesser white-fronted geese is not as critical (3 800-6 100 pairs/20 000-25 000 individuals in autumn).

During the last decade, Norwegian authorities, in close co-operation with among others the Norwegian Ornithological Society (NOF), have made considerable efforts to improve the population status of the Lesser white-fronted goose. Through individual satellite transmitter tagging and monitoring, migration routes and mortality factors have been documented. This has contributed substantially to focusing the conservation efforts along the migration routes.

Migratory species involve considerably larger conservation challenges than sedentary species. The Lesser white-fronted goose has long-stretched and complex migration routes, involving a number of states with different management regimes. This represents a comprehensive challenge and can directly be related to the development of the population. On this background, an International Action Plan for Lesser white-fronted goose was developed in 1996 for the European Commission (Madsen, 1996¹). At the same time, Norway developed a National Action Plan (DN, 1996²). These plans each give specific guidance for conservation measures and represent the basis for the Norwegian conservation efforts.

Even though there are still considerable challenges in research and conservation, linked to for instance the population's habitat use during the breeding season in Norway and the rest of Fennoscandia, the major challenge relates to the population's migration routes and wintering areas. Through the "Fennoscandian Lesser White-fronted Goose conservation project", NOF and WWF-Finland have co-operated closely to improve the knowledge base and take action along the two main migration routes. This joint effort has also formed basis for the present EU LIFE Nature 04 proposal on securing the European migration route from Fennoscandia via Russia, the Baltic countries and Hungary to the wintering areas in Greece; a project which also DN will take part in. By securing this migration route, the western population component will have safe conditions throughout the annual cycle, and hence a sound basis for natural population growth.

¹ Madsen, J 1996. International Action Plan for the Lesser White-fronted Goose (*Anser erythropus*).

² DN 1996. National Action Plan for Goose Management (in Norwegian). DN-Report 1996-2.

As for the threats linked to the Fennoscandian population we have at an increasing extent become aware of worrying aspects by the release of artificially bred Lesser white-fronted geese in Swedish mountain areas, bordering to Norway, in areas which have been and can still be utilised by wild Lesser white-fronted geese. These concerns are primarily built on recent documentation of the genetic composition of the breeders and the released birds (e.g. Tegelström *et al.* 2001³) and the consequences we fear this could imply for the wild population.

Conservation initiatives

As a consequence of the status and development of the Fennoscandian population, Sweden, Finland and Norway have led the way in the work on protecting the Lesser white-fronted goose populations. We have followed with interest the Swedish and Finnish initiatives to protect the Fennoscandian population through breeding and reintroduction/reinforcement. We have also noted that the Swedish model of reintroduction (including imprinting on Barnacle geese *Branta leucopsis* and change of the migration route to new wintering areas in Europe) has yielded methodological results that may benefit the conservation work. The Finnish approach has not been as successful and was for various reasons (e.g. genetic composition of the breeding population) abandoned in 1998.

We view the Swedish pioneer work, initiated by the Swedish Association for Hunting and Wildlife Management in 1981, as successful in the sense that it as a full-scale experiment has contributed to methodological development for reintroduction of a species threatened by extinction. Such methods can under certain conditions be suitable in restoration work, but have also controversial aspects.

Introduction/reintroduction of migratory species may have unintended negative consequences for biodiversity in other countries. Therefore, one of the main challenges with national measures concerning species or populations that regularly move across country borders, and thus are considered multinational conservation responsibilities, is the need for international agreement on the measures. These aspects of international administration and responsibility are also focused in several international documents/ guidelines on reintroduction, e.g. "IUCN Position Statement on Translocation of Living Organisms"⁴.

International consensus and roles of responsibility are basic requirements and key issues in both the Swedish and the German initiative "Aktion Zwerggans", as both these in our view have potential for negative influence on the wild Fennoscandian population. We can neither see that these initiatives are along the lines of the International Action Plan, the

³ Tegelström, H., Ruokonen, M., & Löfgren, S. 2001. The Genetic status of the captive Lesser White-fronted Geese used for breeding and reintroduction in Sweden and Finland. In Tolvanen, P., Øien, I.J. & Ruokolainen, K. (Eds). Fennoscandian Lesser White-fronted Goose conservation project. Annual report 2000. – WWF Finland Report 13 & Norwegian Ornithological Society, NOF Rapportserie Report no. 1-2001: 37-39.

⁴ IUCN/SSC (1987) IUCN Position Statement on Translocation of Living Organisms: Introductions, Re-introductions and Re-stocking

recommendations on reintroduction in the Bern convention⁵, the IUCN criteria for reintroductions⁶, nor in other ways build on necessary international clarification and support.

The "Aktion Zwerggans" is based on the same main principles as the Swedish project with respect to reintroduction and manipulation of migration routes. Upon request from the German Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (21.01.2003) to use Swedish mountain areas as reintroduction/breeding areas for a new artificial population, Swedish authorities applies, however, in its rejection (21.02.2003) partly equivalent arguments as e.g. Norway has put forward against the Swedish scheme. From the Norwegian side we are satisfied with the decision that has been made by EPA in this case, and hope that the same line of arguments will be applied also when evaluating the Swedish reintroduction project.

In the German project the lack of natural breeding sites for the new population on national grounds necessitates co-operation with other countries. Breeding localities may be perceived as critical in such a case, but for migrating species also staging and wintering sites may represent equally critical challenges. Since both projects aim to establish new populations and include manipulation of the migration routes, they will per definition constitute both reintroduction and introduction (to countries in Western Europe where Lesser white-fronted geese never have been present as a regular wintering species) with the implications this has according to existing recommendations and guidelines.

Norwegian as well as Danish scientific groups have for years been concerned about the potential consequences of the Swedish project (e.g. Norderhaug 1984⁷), a worry that has been reinforced as a result of the new information concerning genetic aspects. National and international bird conservation communities (e.g. BirdLife International) also share and express this concern.

In Norway we have based our conservation efforts of the Lesser white-fronted goose around the objective of protecting the existing wild population along the lines of the International Action Plan. We consider the action plan to represent a good and agreed platform, which should be successful if there is sufficient international support for the measures. We also agree with the UNEP-WCMC⁸ in their focus on CMS as an important instrument to protect the species effectively along the different flyways.

According to our action plan and our understanding of both the International Action Plan, the recommendation No. 58 of the Bern Convention, and the IUCN guidelines for reintroduction, we have taken a restrictive position on reintroduction as a measure of conservation at this stage. Referring to the International Action Plan that opens for reintroduction as an alternative

⁵ The Bern Convention/Standing Committee "Recommendation No. 58 (adopted on 5 December 1997) on the reintroduction of organisms belonging to wild species and on restocking and reinforcing populations of such organisms in the environment".

⁶ IUCN/SSC (1995) Guidelines for Re-introduction

⁷ Norderhaug, M. 1984: Captive breeding and reintroduction of northern geese. Nor. Polarinst. Skr. 181: 161-164.

⁸ UNEP-World Conservation Monitoring Centre 2003. Report on the status and perspective of the Lesser White-fronted Goose *Anser erythropus*. CMS/ScC12/Doc.5/Attach 2.

to the extinction of the species⁹, we also think that such reintroduction has several controversial aspects and that it is a kind of measure that only should be considered if the Fennoscandian population is considered extinct or if it very clearly will be without possibilities to recover naturally. These circumstances are also addressed and discussed in the WCMC-report to the Scientific Committee of CMS.

We understand EPAs desire to have Lesser white-fronted geese as regular breeding birds in Sweden. However, the Lesser white-fronted goose still exists within parts of its natural distribution area in Fennoscandia, and the fact that the Fennoscandian population at present only has known breeding sites within Norwegian territory may be due to temporary coincidences and deficient knowledge about the breeding distribution. The Finnish working group on Lesser white-fronted goose has observed a bird with breeding-type behaviour in Northern Sweden as late as 1998¹⁰, as well as single birds in Finnish Lapland almost annually, and it is very likely that the remaining population regularly utilises bordering mountain areas in Sweden and Finland during breeding and moulting periods.

The key role of northern Fennoscandia as breeding and rearing areas for the remaining population underlines the importance of Sweden, Finland and Norway appreciating this as a common population for which we have a joint responsibility to protect. This comprise national maintenance of both existing and previously utilised Lesser white-fronted goose habitats in this area, and prevention of factors that may affect the population negatively. By defining the Lesser white-fronted goose as extinct in Sweden and on that basis implement or continue reintroduction actions, unforeseen impacts may arise that turn out to weaken the possibilities to protect the original population.

Concern about genetic composition and consequences of reintroduction

From an isolated perspective it could be argued to be an internal national matter when Swedish authorities permits reintroduction of a new population of Lesser white-fronted goose within Swedish territory. However, in our view problems arise when this population starts utilising habitats of the wild population, and potentially or factually interferes with the wild population that we attempt to protect in co-operation with other countries along the migration route and in the wintering areas. The Norwegian areas (Rana, Hatfjelldal, Borgefjell) that border on the Swedish reintroduction area (Svaipa) have been, and probably still are, used by a southern offshoot of the Fennoscandian population. These areas will therefore be retained as intact recruiting or expansion areas for the core population in Finnmark. As late as in 2003 a pair of Lesser white-fronted geese that probably belongs to the original Fennoscandian population was observed on the Norwegian side of this region (Borgefjell). We do not know very well the status of this segment of the population, but potentially both habitat competition, transfer of diseases and hybridisation with individuals from the Swedish reintroduced

⁹ *"Reintroduction and restocking may be accepted as an alternative way to minimise the risk of extinction of the species but should be applied only when other efforts to conserve the wild population appear to fail and the IUCN criteria for reintroductions are met".*

¹⁰ Pääläinen, J. & Timonen, S. 1999: Field work in Lapland. In: Tolvanen, P., Øien, I.J. & Ruokolainen, K. (eds.): Fennoscandian Lesser White-fronted Goose conservation project -Annual report 1998. - WWF Finland report No 10 & NOF Rapportserie Report No 1-1999: 35-36.

population may be relevant threat factors. During recent years Swedish reintroduced birds have regularly been observed on the Norwegian side, not far from these sites.

The conclusions from the project that shall clarify the genetic status of the birds in the Swedish breeding and reintroduction programme are not yet finalized. However, the present documentation demonstrate that the reintroduction birds represent a genetic mixture of different populations as well as at least three different mitochondrial-DNA lineages of White-fronted geese *Anser albifrons*. This implies that these individuals in the context of conservation biology may be viewed as a "novel form". Hybridisation will change the genetic composition of the wild population and may also cause outbreeding depression that may have severe consequences for the wild population. In other species it has been shown that such hybridisation gives i.a. reduced fitness in offspring that can be detrimental to the wild population¹¹. Furthermore we know that the Swedish breeding stock has been subject to outbreaks of disease (Andersson 2004¹²), increasing the risk for transfer of infections to wild individuals.

The combination of genetic introgression (mixing), possible outbreeding depression, human influence and imprint/manipulation of migration routes may also affect the predictability of the introduced birds' movements during the breeding season, mating behaviour and so forth, and hence cause increased risk for mix-up of the populations and subsequently negative influence of the wild population.

International framework and national implications

In the Convention of Biological Diversity (CBD) the genetic level is included as a responsibility for conserving biodiversity. This is also implicit in a number of other international nature conservation conventions that both Norway and Sweden have ratified. The Bern convention, the Bonn convention and also the EU wild birds' directive all have additional specific requirements to member states when it comes to threatened species and reintroduction actions.

The Stockholm Declaration on the Human Environment (1972), Principle 21, nails down that "*States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction*". This principle has also been raised in the IUCN Position Statement on Translocation of Living Organisms, when referring to international administration – which is a key issue when it comes to such measures applied to migrating species and populations.

The Bonn Convention Recommendation no. 58 and the IUCN guidelines for reintroduction represent the most material framework descriptions for reintroduction of species to date. We cannot see that the Swedish reintroduction programme falls within this framework, as it is

¹¹ McGinnity, P. et al. (2003): Fitness reduction and potential extinction of wild populations of Atlantic salmon, *Salmo salar*, as a result of interactions with escaped farm salmon. Proc. R. Soc. Lond. B.

¹² Andersson, Å. 2004: The reintroduction of the Lesser White-fronted Goose in Swedish Lapland – a summary for 2000-2003. In: Aarvak & Timonen. (Eds.): Fennoscandian Lesser White-fronted Goose Conservation Project Annual Report 2004, In press.

also presupposed in the International Action Plan for Lesser white-fronted goose (cf. footnote 9).

The precautionary principle and demand for thorough analysis, risk assessment and scientific follow-up are included in all international framework documents describing and limiting translocation activities. All these documents have, however, in common that they were developed in the 1990's, many years after the Swedish reintroduction programme was initiated. This makes it understandable that the programme does not meet current demands and criteria.

Taking into account the reintroduction moratorium from EPA (taking effect in 1999) Swedish authorities now stand at a crossroads where it would be natural to evaluate the introduction programme on a more general basis, not only with respect to genetic issues, but also in the light of international framework conditions, hereunder risk assessment and so forth. From the Norwegian side we are prepared to continue the discussions, but we think it can be appropriate that the principal aspects will be thoroughly examined and clarified by an internationally competent body. Also in order to develop and strengthen the international understanding and acceptance linked to this complex issue.

Urgent steps to conserve the Fennoscandian population

The question of genetic definition and conservation of populations has become a key issue in this case. According to Ruokonen *et al.* (2003) the genetic analysis indicates that the Fennoscandian population is a genetic distinct unit that is separated from both the Siberian breeding population and Lesser white-fronted geese that breed in the European part of Russia. According to the CBD, these populations should hence be separate management units.

In the letter to the European Commission (22.10.2003) EPA refers to the Swedish introduced population as the only breeding Lesser white-fronted goose population within the EU. On this background it is claimed: "*Sweden has a great responsibility to maintain and to increase the population size*". These statements may however have consequences beyond Swedish borders, and for Norway we fear a population increase and the potential impact of a strong introduced population in these areas that could expand further and eventually "absorb" individuals from the wild population in Fennoscandia. In the longer term, this may contribute to ruin the Fennoscandian population of Lesser white-fronted geese as we know it today. Recent data from Sweden indicates that the breeding area of the population is about to expand even without new supplies of birds during the latest three years (Andersson 2004).

Until a joint international policy exists, and if possible a genetic analysis of the entire introduced population, the Norwegian position is that it is unwise to continue the introduction of Lesser white-fronted geese, even if one should gain access to birds from Russia (representing pure breeding material). Although culling of captive individuals with known undesired genotype has been initiated from the Swedish side, as well as a preliminary cease of introduction awaiting the conclusions from the genetic analysis, we think there is need for more comprehensive actions to avoid the wild population being subject to further threats.

Direktoratet for **naturforvaltning**

We are aware of the marginal status of the Fennoscandian population of Lesser white-fronted goose, and the problem that small populations easily can be exposed to episodes/disasters which suddenly can wipe out the population. Hence, we are prepared to discuss an adequate way to secure a genetic basis for a possible future joint reintroduction effort if that should prove necessary. Unpublished data from the resting areas in Hungary indicate however that the Fennoscandian population could be over the most critical stage. In 2003 almost all of the birds recorded during the post breeding migration in Finnmark were observed in resting areas in Hungary, and the same group was observed in Greece in January 2004 almost without loss of individuals. Earlier it has been assumed that only approximately half the population utilises the western/European migration route, but if the data from this year represent a more permanent change of the population's migration route it signals a potential population increase in the years to come - if this flyway can be protected effectively. Further securing of the population and habitat improvements along the western migration route through a wide European initiative could then be crucial to protect the Fennoscandian population of Lesser white-fronted goose.

The preconditions to achieve positive results in conservation work on both the Fennoscandian population and the main populations breeding in Russia have changed substantially during later years, also due to the political opening towards Russia and other countries with key roles in the conservation work. We think that all parties that are responsible or interested see the necessity for a holistic effort to protect viable wild populations of the Lesser white-fronted goose, but we recognize that there are still quite substantial differences in the views on how to achieve this objective. Faced with this challenge it is in our view vital to devote modern conservation biology principles as a basis, and to follow international guidelines if reintroduction/ reinforcement is found to be necessary.

We wish to see EPA as a strong co-player in a future wide co-operation to conserve and rebuild the Fennoscandian population of Lesser white-fronted goose, and ask that our concerns will be carefully considered as part of an evaluation of the Swedish reintroduction programme.

Yours Sincerely

Janne Solli
Director General

Yngve Svarte

Direktoratet for **naturforvaltning**

C.c.

European Commission, B1049, Brussels, BELGIUM (Att. Bruno Julien, DG ENV/D.1; Bernard Brookes, DG ENV/D.1; Nicholas Hanley, DG ENV/B.2)

Ministry of Environment, Postboks 8013 Dep, 0030 Oslo

Ministry of Environment, Tegelbacken 2, 103 33 Stockholm, SWEDEN

Ministry of Environment, Kasarmikatu 25, P.O. Box 35, FIN-00023, Government, Helsinki, FINLAND
(Att. Pertti Rassi; Esko Jaakkola; Matti Osara)

Ministry of Environment, Nature Conservation and Nuclear Security, Bonn, Heinrich-v, Stephan-Str 1, 53 175 Bonn, GERMANY

Ministry of Agriculture, Nature Mgmt & Fisheries, The Hague, THE NETHERLANDS

Bern Convention, Council of Europe, Secretariat General, F-67075 Strasbourg Cedex, FRANCE

CMS Secretariat, UN-Premises, Martin-Luther-King-Str. 8, D-53175 Bonn, GERMANY

AEWA, African-Eurasian Migratory Water Bird Agreement, UN-Premises, Martin-Luther-King-Str. 8, D-53175 Bonn, GERMANY

BirdLife International, European divisjon, Wageningen, Droevendaalsesteeg, 3a PO Box 127, NL-6700 Wageningen, THE NETHERLANDS

IUCN Species Survival Commission, Rue Mauverney 28, CH-1196 Gland, SWITZERLAND

Wetlands International, PO Box 471 6700 AL Wageningen, THE NETHERLANDS

Wetlands International - Goose Specialist Group, att: Bart Ebbing, Internationaal Natuurbeheer, Centrum voor Ecosystemen, Alterra, Postbus 47, 6700 AA Wageningen, THE NETHERLANDS

CAFF, Conservation of Arctic Flora and Fauna, att: Kent Wohl, U.S. Fish and Wildlife Service, Anchorage, Alaska 99503 U.S.A.

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WWF Sweden, Ulriksdals slott, 17081 Solna, SWEDEN

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Swedish Ornithological Society, Ekhagsvägen 3, 104 05 Stockholm, SWEDEN

Direktoratet for **naturforvaltning**

Projekt Zwerggans, att. Wolfgang Scholze, 2nd Co-Chairman, Deutscher Aero Club, Referat Umwelt & Natur, Hermann-Blenk-Str. 28, D-38108 Braunschweig, GERMANY

Swedish Lesser white-fronted goose project, att. Åke Andersson, Ringgatan 39C, SE-75217 Uppsala, SWEDEN

Swedish Hunters Association, Öster-Malma - 611 91 Nyköping, SWEDEN

Danmarks Miljøundersøgelser att. Jesper Madsen, Afdelingen for Arktisk Miljø, DMU Postboks 358, Frederiksborgvej 399, 4000 Roskilde, DENMARK

Appendix D – Dutch Council of State ruling of 17th March 2004

LWfGoose HAC Ruling of 17 March 2004.doc

page 1 of 6

LJN number: AO5747 Case number: 200305428/1

Source: Council of State, The Hague

Date of judgment: 17 March 2004

Date of publication: 17 March 2004

Type of case: administrative law - administrative law (other)

Type of proceedings: first instance - panel of three State Councillors

200305428/1.

Date of judgment: 17 March 2004

ADMINISTRATIVE JURISDICTION DIVISION

Judgment in the case between:

“Stichting De Faunabescherming”, a foundation with its registered office in Amstelveen, The Netherlands, Appellant,

and

the Minister of Agriculture, Nature and Food Quality, Defendant.

1. Course of the Proceedings

In a decision rendered on 21 March 2003, the Defendant refused to designate the area specified by the Appellant in the application, namely “De Abtskolk-De Putten”, as a “Special Protection Area” (hereinafter “SPA”) within the meaning of Article 4(1) and (2) of Directive 79/409/EEC of the Council of the European Communities of 2 April 1979 on the Conservation of Wild Birds (OJEC 1979, L 103; hereinafter “Birds Directive”).

In a decision rendered on 7 July 2003, the Defendant declared that the objection filed to that decision was unfounded.

In a letter dated 14 August 2003, the Appellant lodged an appeal against this decision with the Council of State, which received the appeal on 15 August 2003.

In a letter dated 24 October 2003, the Defendant submitted a statement of defence.

The Division dealt with the case at its session on 13 January 2003, at which there appeared the Appellant, represented by A.M. Nijboer and B. Arentz, lawyers practising in Amsterdam, and the Defendant, represented by H.D. Strookman and J.A.W.M. Ponten, officials of the Ministry.

2. Grounds for the Judgment

2.1. In the challenged decision, the Defendant ruled the objections raised by the Appellant to be unfounded and persisted in its refusal to designate the area concerned as an SPA. In the Defendant’s view, the area specified by the Appellant, namely “De Abtskolk-De Putten”, does not qualify as an SPA for the lesser white-fronted goose.

The Defendant stated in support of its decision that the lesser white-fronted geese that winter in the Netherlands come mainly from a reintroduction programme taking place in Sweden, meaning that they do not form part of a population naturally occurring in the wild. In the Defendant’s view, the fact that lesser white-fronted geese are now regularly to be found in the Netherlands is solely the result of the said reintroduction programme, one of the effects of which has been to alter the birds’ migration route.

The Defendant also stated that there are indications that the material initially used for the reintroduction programme had involved genetic crossbreeding with a closely related

species of goose, namely the greater white-fronted goose.

2.2. The Appellant is unable to accept that decision. Where the Defendant's assertion regarding the undesirability of the introduction (or reintroduction) of the lesser white-fronted goose and the artificial alteration of the birds' migration routes are concerned, the Appellant argues that the background to the presence of the lesser white-fronted goose [in the Netherlands] is irrelevant. The Appellant argues that the mere fact that lesser white-fronted geese winter in the Netherlands requires the Defendant to assess whether an SPA should be designated for them. The Appellant also disputes the assertion that the lesser white-fronted geese to be found in the Netherlands do not belong to a population naturally occurring in the wild. It considers that the Netherlands is part of the natural range of the species concerned. Where the genetic impurity referred to by the Defendant is concerned, the Appellant argues that it is uncertain whether that such impurity is in fact involved. The Appellant also considers it impossible to determine the extent of the genetic purity of lesser white-fronted geese.

2.2.1. The area outlined by the Appellant is bounded, broadly, by the Hondsbossche Zeewering, Petten, the Noord-Hollands Kanaal, the Westfriese Zeedijk, and Camperduin, and amounts to some 800 hectares. It is used by farmers as pasture, and contains a number of artificial lakes.

2.3. Pursuant to Article 1(1) of the Birds Directive, that Directive relates to the conservation of all species of naturally occurring birds in the wild state in the European territory of the Member States. It covers the protection, management, and control of these species and lays down rules for their exploitation.

Pursuant to Article 3(1) of the Birds Directive, Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all species of naturally occurring birds in the wild state in the European territory of the Member States.

Pursuant to Article 4(1) of the Birds Directive, the species mentioned in Annex I to the Directive shall be the subject of special conservation measures by the Member States concerning their habitat; Member States shall classify in particular the most suitable territories in number and size as Special Protection Areas (hereinafter "SPAs") for the conservation of these species.

Pursuant to Article 27(1) of the 1998 Nature Conservation Act (*Natuurbeschermingswet 1998*), the Minister of Agriculture, Nature Management and Fisheries shall designate areas for the implementation of treaties or other international obligations regarding nature and landscape conservation, insofar as such treaties or obligations so require.

2.3.1. The Division notes that in its Judgment of 8 February 1996 in the Vergy case (C 149/94, European Court Reports 1996 p. I-00299) the Court of Justice of the European Communities (hereinafter "the Court") ruled that the Birds Directive did not apply to birds born and reared in captivity. In the same case, the Court also ruled that the Birds Directive obligates a Member State to ensure the protection of a species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies, even when the natural habitat of the species in question does not occur in the Member State concerned. In so ruling, the Court considered that the Birds Directive is intended to provide protection for wild birds throughout the Community, irrespective of the areas they stay in or pass through.

In its judgment of 19 May 1998 in the case of the Commission of the European Communities versus the Kingdom of the Netherlands (Case C 3/96, European Court Reports 1998, p. I-3031), the Court ruled that Article 4(1) of the Birds Directive obligates Member States to classify as Special Protection Areas the most suitable territories in

number and size for the conservation of species mentioned in Annex I, an obligation which it is not possible to avoid by adopting other special conservation measures. It follows, after all, from that provision that as soon as birds belonging to the species indicated occur in the territory of a Member State, that Member State must designate Special Protection Areas for them. In selecting and demarcating an SPA, no account may be taken of the economic requirements mentioned in Article 2 of the Directive.

The Member States do have a certain margin of discretion in selecting and demarcating an SPA, but – as the Court already found – it is certain ornithological criteria specified in the Directive that apply to the designation of such areas. This means that the Member States' margin of discretion in choosing the most suitable territories does not concern the appropriateness of classifying as Special Protection Areas the territories which appear the most suitable according to ornithological criteria, but only the application of those criteria for identifying the most suitable territories for conservation of the species listed in Annex I to the Directive.

The Court therefore finds that the Member States are consequently under an obligation to designate as SPAs all areas which appear, according to ornithological criteria, to be the most suitable for conserving the species concerned.

2.3.2. In selecting the Special Protection Areas, the Defendant applies ornithological criteria. An area is selected as an SPA in the context of the Birds Directive if it complies with a number of criteria. Once it has been selected, its boundaries are defined. In designating areas as SPAs, the following selection criteria are applied:

1. Annex I to the Birds Directive lists the species of birds that are in need of special protection (hereinafter "Annex I species"). The list was last updated in 1997 and currently comprises 181 species. From the areas where official bird counts indicate the occurrence of an Annex I species, the five areas were selected with the greatest numbers of that species, unless fewer than two breeding pairs or five individual specimens occur in the area concerned. Areas that are among the five most important areas for the species have been designated as SPAs.

2. An area also qualifies for designation as an SPA if at least 1% of the biogeographic population of a species or subspecies of a (migratory) waterbird regularly broods, moults, feeds, and/or rests there. This applies both to migratory waterbirds listed in Annex I to the Birds Directive and to migratory waterbirds not listed in that Annex.

3. For selected areas, the restriction applies that the area concerned is only designated an SPA if, insofar as no designation orders for water are concerned, it includes at least 100 hectares which have been assigned formal nature conservation status. The intention is that only the most suitable bird areas of a certain size should be designated.

2.3.3. As appears from Annex 1B to Annex 1 (Selection criteria and method of demarcation) Part 1 (General) of the Memorandum in Response to the Birds Directive (*Nota van Antwoord Vogelrichtlijn*), the Defendant, when selecting or demarcating Special Protection Areas for designation, did not include the lesser white-fronted goose or a number of other species listed in Annex I to the Birds Directive that regularly occur in the Netherlands. As the reason for excluding the lesser white-fronted goose, Annex 1B states that the birds concerned are primarily reintroduced specimens and their offspring.

2.3.4. The lesser white-fronted goose (*Anser erythropus*) is included in Annex I to the Birds Directive.

It follows from Article 1(1) of the Directive, taken in conjunction with Article 4(1) and Annex I to the Directive, that the lesser white-fronted goose is a species of naturally occurring birds in the wild state in the European territory of the Member States to which

the Treaty applies.

Given the documentation, the Division finds that the lesser white-fronted geese deriving from the Swedish reintroduction programme cannot be classified as birds born and reared in captivity. This means that these specimens are also subject to the provisions of the Birds Directive.

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.

In view of the above considerations, the Division finds that the fact that the lesser white-fronted goose is listed in Annex I to the Birds Directive requires an assessment to be made as to whether an SPA should be designated for that species. Since the Defendant did not include the lesser white-fronted goose in the survey carried out with a view to designating Special Protection Areas, it is not possible to determine whether the area concerned in the present case is in fact one of the five most important areas or one of the "1% areas". It follows, therefore, that the challenged decision was rendered contrary to the duty of due care that must be observed in preparing a decision.

2.4. As appears from the documents and the proceedings at the hearing, the Defendant based the challenged decision, alternatively, on the view that the area referred to by the Appellant does not qualify for designation as an SPA because it does not comply with the requirement that it include a continuous area of at least 100 hectares which have been assigned formal nature conservation status.

2.4.1. In respect of that criterion and its application, the Appellant advances the following arguments. It argues that the area concerned does indeed include a continuous area of at least 100 hectares which have been assigned formal nature conservation status. It also argues that the applicable policy merely requires there to be 100 hectares which have been assigned formal nature conservation status and that those hectares are not required to constitute a continuous area. Moreover, that criterion cannot prevent the designation of areas if only a restricted number of areas qualify for SPA status, as in the case of the lesser white-fronted goose. The Appellant also disputes that accepting that the 100-hectare requirement had not been met would, of itself, mean that the area was unsuitable for designation as an SPA.

2.4.2. The Division finds that the 100-hectare requirement was applied as an extra assessment criterion for selecting the "terrestrial" areas. Areas can qualify for designation as an SPA if they meet the first two selection criteria referred to in 2.3.2. Areas that qualify for designation as an SPA in the light of the first or second criterion must therefore, in principle, be designated as such. It is, after all, ornithological criteria that are decisive.

However, the third criterion requires that terrestrial areas that qualify in principle for designation must include a 100-hectare area that has been assigned formal nature conservation status. In this connection, "formal nature conservation status" is defined as areas that have the status of protected nature reserve (*beschermd natuurmonument*) or state nature reserve (*staatsnatuurmonument*) under the Nature Conservation Act and areas owned and managed by the State Forest Service (*Staatsbosbeheer*) or by the organisations covered by the scheme for subsidies to private organisations managing areas of land (*Regeling subsidies particuliere terreinbeherende organisaties*). According to the Defendant, this makes it possible to exclude areas from designation as SPAs that

are not “the most suitable”, for example sand tips, temporary construction sites, and traffic junctions.

In this context, the Division finds that, contrary to what the Appellant argues, the basic principle of the Defendant’s policy is that one must be dealing with a continuous area of at least 100 hectares that has been assigned formal nature conservation status (Memorandum in Response to the Birds Directive, Part 1, General, p. 59).

As the Division previously ruled, for example in its judgment of 19 March 2003 regarding the designation of the Haringvliet SPA (case number 200201933/1; www.raadvanstate.nl and JM 2003/70), the 100-hectare criterion is intended to exclude areas from designation as an SPA if their preservation can definitely not be guaranteed, despite the presence there of the protected species of birds concerned. In this context, the Division found that the intention was to comply with the term “most suitable territories in number and size” used in Article 4 of the Birds Directive in connection with the designation of an SPA. In the judgment referred to, the Division found that the method selected by the Defendant to actually implement the provisions of Article 4 of the Birds Directive was not unreasonable, namely specifying a third criterion for the selection of areas for designation as SPAs.

2.4.3. As regards the application of the 100-hectare criterion in the present case, the Division finds as follows.

The documents show that within the area specified by the Appellant, there are a number of sub-areas that have been assigned formal nature conservation status and that together make up an area of some 114 hectares. The largest of those sub-areas is one of approximately 74 hectares.

The documents and the proceedings at the hearing also show that the lesser white-fronted goose occurs only in a very small number of areas in the Netherlands. The Appellant has stated, without this being disputed, that in addition to the area currently at issue, two other areas are involved. Assuming that to be the case, the first criterion for designating an area as an SPA has been met, namely that it is one of the five most important areas for a particular species of bird. To that extent, there is no need to determine an order of priority, by applying the 100-hectare criterion, for areas that qualify for designation.

Under these circumstances, and taking into account that it has not been shown that it will be impossible to conserve the ornithological features of the area specified by the Appellant in a sustainable manner, the Division finds that in this case the Defendant could not reasonably adopt the position that the absence of 100 hectares of continuous area with formal nature conservation status meant that the area should not qualify for designation as an SPA.

2.5. The appeal is held to be well-founded, meaning that the contested decision must be set aside due to its being contrary to Articles 3:2 and 3:4(2) of the General Administrative Law Act (*Algemene wet bestuursrecht*).

2.6. The Defendant must be ordered to pay the costs of the present appeal proceedings in the manner specified below.

Given that the contested decision is now entirely set aside, the Defendant must render a new decision on the Appellant’s request for reimbursement of the costs it incurred during the objection phase.

3. Decision

LWfGoose HAC Ruling of 17 March 2004.doc

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The Administrative Jurisdiction Division of the Council of State,

Rendering judgment in the name of the Queen,

I. declares the appeal to be well-founded;

II. sets aside the decision rendered by the Minister of Agriculture, Nature and Food Quality on 7 July 2003;

III. orders the Minister of Agriculture, Nature and Food Quality to pay the costs of the appeal proceedings incurred by the Appellant in the amount of EUR 644, which sum consists entirely of the fee paid for professional legal assistance rendered by a third party; the said sum shall be paid to the Appellant by the State of the Netherlands (Ministry of Agriculture, Nature and Food Quality);

IV. orders the State of the Netherlands (Ministry of Agriculture, Nature and Food Quality) to reimburse the Appellant for the court registry fees (EUR 232) which it was required to pay in respect of the adjudication of its appeal.

Thus determined by R.J. Hoekstra (President) and R.H. Lauwaars and A. Kosto (Panel Members) in the presence of R.F.J. Bindels (Officer of State).

(signature) Hoekstra (signature) Bindels
President Officer of State

Thus announced in public on 17 March 2004.

85-400.

Appendix E – Dutch Council of State ruling of 29th December 2004

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Judgment

Case number: *200408181/1*
 Date of publication: *Wednesday 29 December 2004*
 Versus: *the Minister of Agriculture, Nature and Food Quality*
 Type of proceedings: *First instance - panel of three State Councillors*
 Area of law: *Chamber 1 – Spatial Planning – Nature Conservation Act*

200408181/1.
 Date of judgment: 29 December 2004

ADMINISTRATIVE JURISDICTION DIVISION

Judgment in the case between:

“Stichting De Faunabescherming”, a foundation with its registered office in Amstelveen, The Netherlands, Appellant,

and

the Minister of Agriculture, Nature and Food Quality, Defendant.

1. Course of the Proceedings

In a decision rendered on 21 March 2003, the Defendant refused to designate the area specified by the Appellant in the application, namely “De Abtskolk-De Putten”, as a “Special Protection Area” (hereinafter “SPA”) within the meaning of Article 4(1) and (2) of Directive 79/409/EEC of the Council of the European Communities of 2 April 1979 on the Conservation of Wild Birds (OJEC 1979, L 103; hereinafter “Birds Directive”).

In a decision rendered on 7 July 2003, the Defendant declared that the objection filed to that decision was unfounded.

In a letter dated 14 August 2003, the Appellant lodged an appeal against this decision with the Council of State, which received the appeal on 15 August 2003.

In a ruling rendered on 17 March 2004 ([200305428/1](#)) the Division declared the appeal to be well-founded and set aside the decision rendered on 7 July 2003.

In a decision rendered on 7 September 2004, the Defendant once more declared that the objection filed by the Appellant against the decision rendered on 21 March 2003 was unfounded.

In a fax received by the Council of State on 6 October 2004, the Appellant lodged an appeal against the decision rendered on 7 September 2004.

The Division dealt with the case at its session on 16 November 2004, at which there appeared the Appellant, represented by A.M. Nijboer, a lawyer practising in Amsterdam, and the Defendant, represented by H.D. Strookman and E.R. Osieck, officials of the Ministry.

2. Grounds for the Judgment

2.1. The Appellant argues that in rendering the challenged decision, the Defendant wrongly ignored the judgment rendered by the Division on 17 March 2004 ([200305428/1](#)). In the view of the Appellant, the Defendant should now have designated

the “De Abtskolk-De Putten” area as an SPA within the meaning of the Birds Directive because of the presence there of the lesser white-fronted goose (*Anser erythropus*). In that connection, the Appellant submitted that the area concerned met the criterion of being one of the five most important areas. The Appellant also requested the Division to rule that the Defendant should, after all, designate that area as an SPA within two weeks, or should decide on the objection, such being subject to the imposition of a penalty for non-compliance of EUR 5,000 for each day that the Defendant failed to comply with the judgment.

2.2. In its judgment of 17 March 2004, the Division took grounds including the following:

“The Division notes that in its Judgment of 8 February 1996 in the Vergy case (C 149/94, European Court Reports 1996 p. I-00299) the Court of Justice of the European Communities (hereinafter “the Court”) ruled that the Birds Directive did not apply to birds born and reared in captivity. In the same case, the Court also ruled that the Birds Directive obligates a Member State to ensure the protection of a species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies, even when the natural habitat of the species in question does not occur in the Member State concerned. In so ruling, the Court considered that the Birds Directive is intended to provide protection for wild birds throughout the Community, irrespective of the areas they stay in or pass through.

In its judgment of 19 May 1998 in the case of the Commission of the European Communities versus the Kingdom of the Netherlands (Case C 3/96, European Court Reports 1998, p. I-3031), the Court ruled that Article 4(1) of the Birds Directive obligates Member States to classify as Special Protection Areas the most suitable territories in number and size for the conservation of species mentioned in Annex I, an obligation which it is not possible to avoid by adopting other special conservation measures. It follows, after all, from that provision that as soon as birds belonging to the species indicated occur in the territory of a Member State, that Member State must designate Special Protection Areas for them. In selecting and demarcating an SPA, no account may be taken of the economic requirements mentioned in Article 2 of the Directive.

The Member States do have a certain margin of discretion in selecting and demarcating an SPA, but – as the Court already found – it is certain ornithological criteria specified in the Directive that apply to the designation of such areas. This means that the Member States’ margin of discretion in choosing the most suitable territories does not concern the appropriateness of classifying as Special Protection Areas the territories which appear the most suitable according to ornithological criteria, but only the application of those criteria for identifying the most suitable territories for conservation of the species listed in Annex I to the Directive.

The Court therefore finds that the Member States are consequently under an obligation to designate as SPAs all areas which appear, according to ornithological criteria, to be the most suitable for conserving the species concerned.”

“It follows from Article 1(1) of the Directive, taken in conjunction with Article 4(1) and Annex I to the Directive, that the lesser white-fronted goose is a species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies.

Given the documentation, the Division finds that the lesser white-fronted geese deriving from the Swedish reintroduction programme cannot be classified as birds born and reared in captivity. This means that these specimens are also subject to the provisions of the Birds Directive.

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.

In view of the above considerations, the Division finds that the fact that the lesser white-fronted goose is listed in Annex I to the Birds Directive requires an assessment to be made as to whether an SPA should be designated for that species. Since the Defendant did not include the lesser white-fronted goose in the survey carried out with a view to designating Special Protection Areas, it is not possible to determine whether the area concerned in the present case is in fact one of the five most important areas or one of the "1% areas". It follows, therefore, that the challenged decision was rendered contrary to the duty of due care that must be observed in preparing a decision."

2.3 The Division finds that the Defendant did not base the decision currently contested on a survey and study of the lesser white-fronted goose. The arguments adduced by the Defendant regarding the background to the reintroduction of the lesser white-fronted goose and the genetic purity of the specimens that occur in the Netherlands each year do not justify its having failed to carry out a survey and study. The Division refers in this connection to the grounds for its judgment of 17 March 2004 referred to above. The case law of the Court does not lead to any other opinion. The Defendant's argument regarding the fact that the area concerned is not included in the 1989 and 1994 "Inventory of Important Bird Areas in the European Community" cannot constitute a reason for failing to carry out a survey and study of the lesser white-fronted geese, whether ringed or unringed, occurring in the "De Abtskolk-De Putten" area. It is relevant that, in the light of the case law of the Division, these lists do not have a mandatory effect. One cannot exclude the possibility that other studies may show that the ornithological features of the area justify its being designated as an SPA (see, for example, the judgment rendered by the Division on 12 December 2001, 200001861/1, JM 2002/46). The information submitted by the Defendant (with reference being made to the report of the meeting of the Birds Directive Committee of 5 October 1999 and the letter from the European Commission of 18 March 2004) regarding the uncertainty in scientific circles as to current and future conservation measures for the lesser white-fronted goose should have been all the more reason for the Defendant to carry out a survey and study of this species in the area concerned before rendering a new decision on the Appellant's objection.

It follows from the above that the challenged decision was rendered contrary both to the duty of due care that must be observed in preparing a decision and the requirement that the decision on an objection must be supported by proper reasons. The appeal is held to be well-founded, meaning that the contested decision must be set aside due to its being contrary to Articles 3:2 and 7:12(1) of the General Administrative Law Act (*Algemene wet bestuursrecht*). Given this finding, and taking into account that before rendering a new decision on the complaint the Defendant must carry out a survey and study of the lesser white-fronted goose in the "De Abtskolk-De Putten" area, the Division considers that there are no grounds for acceding to the Appellant's accessory request. The Division does however see good reason to impose the following preliminary injunction as a measure to protect the area concerned as a habitat for the lesser white-fronted goose, applying Article 8:72(5) of the General Administrative Law Act.

2.5 The Defendant must be ordered to pay the costs of the proceedings in the manner specified below.

3. Decision

The Administrative Jurisdiction Division of the Council of State,

Rendering judgment in the name of the Queen,

I. declares the appeal to be well-founded;

II. sets aside the decision rendered by the Minister of Agriculture, Nature and Food Quality on 7 September 2004;

III. imposes the preliminary injunction that the Defendant should treat the “De Abtskolk-De Putten” area as if it had been designated as a Special Protection Area within the meaning of Article 4(1) of the Birds Directive for the lesser white-fronted goose, doing so until six weeks after the new decision to be taken on the objection;

IV. denies what was otherwise requested;

V. orders the Minister of Agriculture, Nature and Food Quality to pay the costs of the appeal proceedings incurred by the Appellant in the amount of EUR 644, which sum consists entirely of the fee paid for professional legal assistance rendered by a third party; the said sum shall be paid to the Appellant by the State of the Netherlands (Ministry of Agriculture, Nature and Food Quality);

VI. orders the State of the Netherlands (Ministry of Agriculture, Nature and Food Quality) to reimburse the Appellant for the court registry fees (EUR 232) which it was required to pay in respect of the adjudication of its appeal.

Thus determined by R.J. Hoekstra (President) and R.H. Lauwaars and J.G.C. Wiebenga (Panel Members) in the presence of P.J.A.M. Broekman (Officer of State).

(signature) Hoekstra (signature) Broekman
President Officer of State

Thus announced in public on 29 December 2004.

Appendix F – The keeping of wild animals in zoos- Directive 1999/22/EC.

COUNCIL DIRECTIVE 1999/22/EC

of 29 March 1999

relating to the keeping of wild animals in zoos

THE COUNCIL OF THE EUROPEAN UNION, Having regard to the Treaty establishing the European Community, and in particular Article 130s(1) thereof, Having regard to the proposal from the Commission, Having regard to the opinion of the Economic and Social Committee(1), Acting in accordance with the procedure laid down in Article 189c of the Treaty(2),

Whereas Council Regulation (EEC) No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein(3) requires evidence of the availability of adequate facilities for the accommodation and care of live specimens of a great many species before their importation into the Community is authorised; whereas that Regulation prohibits the display to the public for commercial purposes of specimens of species listed in Annex A thereof unless a specific exemption was granted for education, research or breeding purposes;

Whereas Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds(4), and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora(5), prohibit the capture and keeping of and trade in a great number of species, whilst providing for exemptions for specific reasons, such as research and education, repopulation, reintroduction and breeding;

Whereas the proper implementation of existing and future Community legislation on the conservation of wild fauna and the need to ensure that zoos adequately fulfil their important role in the conservation of species, public education, and/or scientific research make it necessary to provide a common basis for Member States' legislation with regard to the licensing and inspection of zoos, the keeping of animals in zoos, the training of staff and the education of the visiting public;

Whereas action at the Community level is required in order to have zoos throughout the Community contributing to the conservation of biodiversity in accordance with the Community's obligation to adopt measures for ex situ conservation under Article 9 of the Convention on Biological Diversity;

Whereas a number of organisations such as the European Association of Zoos and Aquaria have produced guidelines for the care and accommodation of animals in zoos which could, where appropriate, assist in the development and adoption of national standards,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Aim

The objectives of this Directive are to protect wild fauna and to conserve biodiversity by providing for the adoption of measures by Member States for the licensing and inspection of zoos in the Community, thereby strengthening the role of zoos in the conservation of biodiversity.

Article 2

Definition

For the purpose of this Directive, "zoos" means all permanent establishments where animals of wild species are kept for exhibition to the public for 7 or more days a year, with the exception of circuses, pet shops and

Wild animals in Zoos directive

establishments which Member States exempt from the requirements of this Directive on the grounds that they do not exhibit a significant number of animals or species to the public and that the exemption will not jeopardise the objectives of this Directive.

Article 3

Requirements applicable to zoos

Member States shall take measures under Articles 4, 5, 6 and 7 to ensure all zoos implement the following conservation measures:

- participating in research from which conservation benefits accrue to the species, and/or training in relevant conservation skills, and/or the exchange of information relating to species conservation and/or, where appropriate, captive breeding, repopulation or reintroduction of species into the wild,
- promoting public education and awareness in relation to the conservation of biodiversity, particularly by providing information about the species exhibited and their natural habitats,
- accommodating their animals under conditions which aim to satisfy the biological and conservation requirements of the individual species, inter alia, by providing species specific enrichment of the enclosures; and maintaining a high standard of animal husbandry with a developed programme of preventive and curative veterinary care and nutrition,
- preventing the escape of animals in order to avoid possible ecological threats to indigenous species and preventing intrusion of outside pests and vermin,
- keeping of up-to-date records of the zoo's collection appropriate to the species recorded.

Article 4

Licensing and inspection

1. Member States shall adopt measures for licensing and inspection of existing and new zoos in order to ensure that the requirements of Article 3 are met.

2. Every zoo shall have a licence within four years after the entry into force of this Directive or, in the case of new zoos, before they are open to the public.

3. Each licence shall contain conditions to enforce the requirements of Article 3. Compliance with the conditions shall be monitored inter alia by means of regular inspection and appropriate steps shall be taken to ensure such compliance.

4. Before granting, refusing, extending the period of, or significantly amending a licence, an inspection by Member States' competent authorities shall be carried out in order to determine whether or not the licensing conditions or proposed licensing conditions are met.

5. If the zoo is not licensed in accordance with this Directive or the licensing conditions are not met, the zoo or part thereof:

(a) shall be closed to the public by the competent authority; and/or

(b) shall comply with appropriate requirements imposed by the competent authority to ensure that the licensing conditions are met.

Should these requirements not be complied with within an appropriate period to be determined by the competent authorities but not exceeding two years, the competent authority shall withdraw or modify the licence and close the zoo or part thereof.

Wild animals in Zoos directive

Article 5

Licensing requirements set out in Article 4 shall not apply where a Member State can demonstrate to the satisfaction of the Commission that the objective of this Directive as set out in Article 1 and the requirements applicable to zoos set out in Article 3 are being met and continuously maintained by means of a system or regulation and registration. Such a system should, inter alia, contain provisions regarding inspection and closure of zoos equivalent to those in Article 4(4) and (5).

Article 6

Closure of zoos

In the event of a zoo or part thereof being closed, the competent authority shall ensure that the animals concerned are treated or disposed of under conditions which the Member State deems appropriate and consistent with the purposes and provisions of this Directive.

Article 7

Competent authorities

Member States shall designate competent authorities for the purposes of this Directive.

Article 8

Penalties

Member States shall determine the penalties applicable to breaches of the national provisions adopted pursuant to this Directive. The penalties shall be effective, proportionate and dissuasive.

Article 9

Implementation

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this directive not later than 9 April 2002. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such a reference shall be laid down by the Member States.

2. Member States shall communicate to the Commission the main provisions of national law which they adopt in the field covered by this Directive.

Article 10

Entry in force

This Directive shall enter into force on the day of its publication in the Official Journal of the European Communities.

Article 11

This Directive is addressed to the Member States. Done at Brussels, 29 March 1999.

For the Council, The President

F. MÜNTEFERING

(1) OJ C 204, 15.7.1996, p. 63. (2) Opinion of the European Parliament of 29 January 1998. (OJ C 56, 23.2.1998, p. 34), Council Common Position of 20 July 1998 (OJ C 364, 25.11.1998, p. 9), and Decision of the European Parliament of 10 February 1999 (not yet published in the Official Journal). (3) OJ L 61, 3.3.1997, p. 1. Regulation as last amended by Commission Regulation (EC) No 2307/97 (OJ L 325, 27.11.1997, p. 1). (4) OJ L 103, 25.4.1979, p. 1. Directive as last amended by Directive 97/49/EC (OJ L 223, 13.8.1997, p. 9). (5) OJ L 206, 22.7.1992, p. 7. Directive as last amended by Commission Directive 97/62/EC (OJ L 305, 8.11.1997, p. 42).

Appendix G – The Birds Directive - Directive 2009/147/EC.

DIRECTIVE 2009/147/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 30 November 2009

on the conservation of wild birds

(codified version)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽²⁾,

Whereas:

- (1) Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds ⁽³⁾ has been substantially amended several times ⁽⁴⁾. In the interests of clarity and rationality the said Directive should be codified.
- (2) Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme ⁽⁵⁾ calls for specific action for biodiversity, including to protect birds and their habitats.
- (3) A large number of species of wild birds naturally occurring in the European territory of the Member States are declining in number, very rapidly in some cases. This decline represents a serious threat to the conservation of the natural environment, particularly because of the biological balances threatened thereby.
- (4) The species of wild birds naturally occurring in the European territory of the Member States are mainly migratory species. Such species constitute a common heritage and effective bird protection is typically a trans-frontier environment problem entailing common responsibilities.
- (5) The conservation of the species of wild birds naturally occurring in the European territory of the Member States is necessary in order to attain the Community's objectives regarding the improvement of living conditions and sustainable development.
- (6) The measures to be taken must apply to the various factors which may affect the numbers of birds, namely the repercussions of man's activities and in particular the destruction and pollution of their habitats, capture and killing by man and the trade resulting from such practices; the stringency of such measures should be adapted to the particular situation of the various species within the framework of a conservation policy.
- (7) Conservation is aimed at the long-term protection and management of natural resources as an integral part of the heritage of the peoples of Europe. It makes it possible to control natural resources and governs their

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use on the basis of the measures necessary for the maintenance and adjustment of the natural balances between species as far as is reasonably possible.

- (8) The preservation, maintenance or restoration of a sufficient diversity and area of habitats is essential to the conservation of all species of birds. Certain species of birds should be the subject of special conservation measures concerning their habitats in order to ensure their survival and reproduction in their area of distribution. Such measures must also take account of migratory species and be coordinated with a view to setting up a coherent whole.
- (9) In order to prevent commercial interests from exerting a possible harmful pressure on exploitation levels, it is necessary to impose a general ban on marketing and to restrict all derogation to those species whose biological status so permits, account being taken of the specific conditions obtaining in the different regions.
- (10) Because of their high population level, geographical distribution and reproductive rate in the Community as a whole, certain species may be hunted, which constitutes acceptable exploitation where certain limits are established and respected, as such hunting must be compatible with maintenance of the population of these species at a satisfactory level.
- (11) The various means, devices or methods of large-scale or non-selective capture or killing and hunting with certain forms of transport must be banned because of the excessive pressure which they exert or may exert on the numbers of the species concerned.
- (12) Because of the importance which may be attached to certain specific situations, provision should be made for the possibility of derogations on certain conditions and subject to monitoring by the Commission.
- (13) The conservation of birds and, in particular, migratory birds still presents problems which call for scientific research. Such research will also make it possible to assess the effectiveness of the measures taken.
- (14) Care should be taken in consultation with the Commission to see that the introduction of any species of wild bird not naturally occurring in the European territory of the Member States does not cause harm to local flora and fauna.
- (15) The Commission will every three years prepare and transmit to the Member States a composite report based on information submitted by the Member States on the application of national provisions introduced pursuant to this Directive.
- (16) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽⁶⁾.
- (17) In particular, the Commission should be empowered to amend certain Annexes in the light of scientific and technical progress. Since those measures are of general scope and are designed to amend non-essential elements of this Directive, they must be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.
- (18) This Directive should be without prejudice to the obligations of the Member States relating to the time limits for transposition into national law of the directives set out in Annex VI, Part B,

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HAVE ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive relates to the conservation of all species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies. It covers the protection, management and control of these species and lays down rules for their exploitation.

2. It shall apply to birds, their eggs, nests and habitats.

Article 2

Member States shall take the requisite measures to maintain the population of the species referred to in Article 1 at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements, or to adapt the population of these species to that level.

Article 3

1. In the light of the requirements referred to in Article 2, Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1.

2. The preservation, maintenance and re-establishment of biotopes and habitats shall include primarily the following measures:

- (a) creation of protected areas;
- (b) upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones;
- (c) re-establishment of destroyed biotopes;
- (d) creation of biotopes.

Article 4

1. The species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution.

In this connection, account shall be taken of:

- (a) species in danger of extinction;
- (b) species vulnerable to specific changes in their habitat;
- (c) species considered rare because of small populations or restricted local distribution;
- (d) other species requiring particular attention for reasons of the specific nature of their habitat.

Trends and variations in population levels shall be taken into account as a background for evaluations.

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Member States shall classify in particular the most suitable territories in number and size as special protection areas for the conservation of these species in the geographical sea and land area where this Directive applies.

2. Member States shall take similar measures for regularly occurring migratory species not listed in Annex I, bearing in mind their need for protection in the geographical sea and land area where this Directive applies, as regards their breeding, moulting and wintering areas and staging posts along their migration routes. To this end, Member States shall pay particular attention to the protection of wetlands and particularly to wetlands of international importance.

3. Member States shall send the Commission all relevant information so that it may take appropriate initiatives with a view to the coordination necessary to ensure that the areas provided for in paragraphs 1 and 2 form a coherent whole which meets the protection requirements of these species in the geographical sea and land area where this Directive applies.

4. In respect of the protection areas referred to in paragraphs 1 and 2, Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.

Article 5

Without prejudice to Articles 7 and 9, Member States shall take the requisite measures to establish a general system of protection for all species of birds referred to in Article 1, prohibiting in particular:

- (a) deliberate killing or capture by any method;
- (b) deliberate destruction of, or damage to, their nests and eggs or removal of their nests;
- (c) taking their eggs in the wild and keeping these eggs even if empty;
- (d) deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as disturbance would be significant having regard to the objectives of this Directive;
- (e) keeping birds of species the hunting and capture of which is prohibited.

Article 6

1. Without prejudice to paragraphs 2 and 3, Member States shall prohibit, for all the bird species referred to in Article 1, the sale, transport for sale, keeping for sale and the offering for sale of live or dead birds and of any readily recognisable parts or derivatives of such birds.

2. The activities referred to in paragraph 1 shall not be prohibited in respect of the species referred to in Annex III, Part A, provided that the birds have been legally killed or captured or otherwise legally acquired.

3. Member States may, for the species listed in Annex III, Part B, allow within their territory the activities referred to in paragraph 1, making provision for certain restrictions, provided that the birds have been legally killed or captured or otherwise legally acquired.

Member States wishing to grant such authorisation shall first of all consult the Commission with a view to examining jointly with the latter whether the marketing of specimens of such species would result or could

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reasonably be expected to result in the population levels, geographical distribution or reproductive rate of the species being endangered throughout the Community. Should this examination prove that the intended authorisation will, in the view of the Commission, result in any one of the aforementioned species being thus endangered or in the possibility of their being thus endangered, the Commission shall forward a reasoned recommendation to the Member State concerned stating its opposition to the marketing of the species in question. Should the Commission consider that no such risk exists, it shall inform the Member State concerned accordingly.

The Commission's recommendation shall be published in the *Official Journal of the European Union*.

Member States granting authorisation pursuant to this paragraph shall verify at regular intervals that the conditions governing the granting of such authorisation continue to be fulfilled.

Article 7

1. Owing to their population level, geographical distribution and reproductive rate throughout the Community, the species listed in Annex II may be hunted under national legislation. Member States shall ensure that the hunting of these species does not jeopardise conservation efforts in their distribution area.
2. The species referred to in Annex II, Part A may be hunted in the geographical sea and land area where this Directive applies.
3. The species referred to in Annex II, Part B may be hunted only in the Member States in respect of which they are indicated.
4. Member States shall ensure that the practice of hunting, including falconry if practised, as carried on in accordance with the national measures in force, complies with the principles of wise use and ecologically balanced control of the species of birds concerned and that this practice is compatible as regards the population of these species, in particular migratory species, with the measures resulting from Article 2.

They shall see in particular that the species to which hunting laws apply are not hunted during the rearing season or during the various stages of reproduction.

In the case of migratory species, they shall see in particular that the species to which hunting regulations apply are not hunted during their period of reproduction or during their return to their rearing grounds.

Member States shall send the Commission all relevant information on the practical application of their hunting regulations.

Article 8

1. In respect of the hunting, capture or killing of birds under this Directive, Member States shall prohibit the use of all means, arrangements or methods used for the large-scale or non-selective capture or killing of birds or capable of causing the local disappearance of a species, in particular the use of those listed in Annex IV, point (a).
2. Moreover, Member States shall prohibit any hunting from the modes of transport and under the conditions mentioned in Annex IV, point (b).

Article 9

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1. Member States may derogate from the provisions of Articles 5 to 8, where there is no other satisfactory solution, for the following reasons:
 - (a) — in the interests of public health and safety,
 - in the interests of air safety,
 - to prevent serious damage to crops, livestock, forests, fisheries and water,
 - for the protection of flora and fauna;
 - (b) for the purposes of research and teaching, of re-population, of re-introduction and for the breeding necessary for these purposes;
 - (c) to permit, under strictly supervised conditions and on a selective basis, the capture, keeping or other judicious use of certain birds in small numbers.
2. The derogations referred to in paragraph 1 must specify:
 - (a) the species which are subject to the derogations;
 - (b) the means, arrangements or methods authorised for capture or killing;
 - (c) the conditions of risk and the circumstances of time and place under which such derogations may be granted;
 - (d) the authority empowered to declare that the required conditions obtain and to decide what means, arrangements or methods may be used, within what limits and by whom;
 - (e) the controls which will be carried out.
3. Each year the Member States shall send a report to the Commission on the implementation of paragraphs 1 and 2.
4. On the basis of the information available to it, and in particular the information communicated to it pursuant to paragraph 3, the Commission shall at all times ensure that the consequences of the derogations referred to in paragraph 1 are not incompatible with this Directive. It shall take appropriate steps to this end.

Article 10

1. Member States shall encourage research and any work required as a basis for the protection, management and use of the population of all species of bird referred to in Article 1. Particular attention shall be paid to research and work on the subjects listed in Annex V.
2. Member States shall send the Commission any information required to enable it to take appropriate measures for the coordination of the research and work referred to in paragraph 1.

Article 11

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Member States shall see that any introduction of species of bird which do not occur naturally in the wild state in the European territory of the Member States does not prejudice the local flora and fauna. In this connection they shall consult the Commission.

Article 12

1. Member States shall forward to the Commission every three years, starting from 7 April 1981, a report on the implementation of national provisions taken under this Directive.
2. The Commission shall prepare every three years a composite report based on the information referred to in paragraph 1. That part of the draft report covering the information supplied by a Member State shall be forwarded to the authorities of the Member State in question for verification. The final version of the report shall be forwarded to the Member States.

Article 13

Application of the measures taken pursuant to this Directive may not lead to deterioration in the present situation as regards the conservation of the species of birds referred to in Article 1.

Article 14

Member States may introduce stricter protective measures than those provided for under this Directive.

Article 15

Such amendments as are necessary for adapting Annexes I and V to technical and scientific progress shall be adopted. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 16(2).

Article 16

1. The Commission shall be assisted by the Committee for Adaptation to Technical and Scientific Progress.
2. Where reference is made to this paragraph, Article 5a(1) to (4) and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

Article 17

Member States shall communicate to the Commission the texts of the main provisions of national law which they adopt in the field governed by this Directive.

Article 18

Directive 79/409/EEC, as amended by the acts listed in Annex VI, Part A, is repealed, without prejudice to the obligations of the Member States relating to the time limits for transposition into national law of the Directives set out in Annex VI, Part B.

References to the repealed Directive shall be construed as references to this Directive and shall be read in accordance with the correlation table in Annex VII.

Article 19

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

Article 20

This Directive is addressed to the Member States.

Done at Brussels, 30 November 2009.

For the European Parliament

The President

J. BUZEK

For the Council

The President

B. ASK

Appendix H – Tables with numbers used for figures in the report

Table A. Data for figure 6. Annual numbers of accepted records held by British Rarities Committee 1986-2011.

Year	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
# records	1														
	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
	1	2	1	1	4	3	4	1	5	4	2	0	4	4	6
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
	3	3	3	3	0	3	2	1	2	1	3	2	1	1	3
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
	2	2	3	4	3	1	2	4	1	1	2	1	1	1	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
				2	3	2	1	1			1		1		
	2006	2007	2008	2009	2010	2011									
					1	1									

Table B. Data for figure 7. Monthly distribution of records of Lesser White-fronted Geese in Hungary in 2015. (data from <http://piskulka.net>).

Month	Russian	Fennoscandian
January	10	
February	13	
March	28	6
April	2	
May		
June		
July		
August		
September	1	3
October	19	2
November	32	
December	20	

Table C. Data for figure 8. Distribution of group size of Lesser White-fronted Geese of Russian and Fennoscandian origin observed in Hungary in 2015. (data from <http://piskulka.net>).

	Fennoscandian	%	Russian	%
1-5	1	0.09	105	0.89
6-10		0.00	13	0.11
11-20	1	0.09		0.00
21-50	3	0.27		0.00
51-100	4	0.36		0.00
100-150	2	0.18		0.00

Table D. Data for figure 11. Average weekly maximum number of Lesser White-fronted Geese throughout the annual cycle in the years 2011-2015. Data from <http://piskulka.net>.

Week	Greece	Hungary	Lithuania	Estonia	Finland	Norway
1	20.8	1.8	0	0	0	0
2	30.8	4.8	0	0	0	0
3	22.2	1.6	0	0	0	0
4	33	1.2	0	0	0	0
5	42.8	1.6	0	0	0	0
6	9.2	1.6	0	0	0	0
7	13	4.8	0	0	0	0
8	35.4	1.6	0	0	0	0
9	37.4	3.8	0	0	0	0
10	22.2	6.6	0	0	0	0
11	24.8	5.2	0.2	0	0	0
12	0	29	0	0	0	0
13	0	58.2	0	0	0	0
14	0	55.8	0	0	0	0
15	0	26.2	0.6	0	0	0
16	0	11	0.6	3.6	0.2	0
17	0	0	3.4	11.2	0.6	0.4
18	0	0	0.4	16	7.8	0
19	0	0	0.2	11	37.2	8.4
20	0	0	0	0	32.6	39.4
21	0	0	0	0	0	34.8
22	0	0	0	0	0	13
23	0	0	0	0	0	4.4
24	0	0	0	0	0	15.2
25	0	0	0	0	0	0.8
26	0	0	0	0	0	1
27	0	0	0	0	0	0.2
28	0	0	0	0	0	0
29	0	0	0	0	0	0

30	0	0	0	0	0	1
31	0	0	0	0	0	0.8
32	0	0	0	0	0	0
33	0	0	0	0	0	11.4
34	0	0	0	0	0	50
35	0	0	0	0	0	58.2
36	0	0	0	0	0	62.2
37	0	0.4	0	0	0	4.4
38	0	21.2	0	0	0	0
39	0	36.2	0	0	0	0
40	30.2	43.4	0	0.2	0	0
41	39.4	18.2	0	0	0	0
42	36	13.75	0	0	0	0
43	32.75	5.75	0	0	0	0
44	38.5	6.25	0	0	0	0
45	56.25	4.75	0	0	0	0
46	40.25	8	0	0	0	0
47	40.25	2.5	0	0	0	0
48	57.75	7.75	0	0	0	0
49	58	5	0	0	0	0
50	36	3.25	0	0	0	0
51	25	3.25	0	0	0	0
52	13.25	13.5	0	0	0	0

Table E. Data for figure 12. Total numbers of Lesser White-fronted Geese during spring staging in Porsangen fjord, Finnmark Norway during the years 1990-2015.

Year	Total
1990	65
1991	99
1992	63
1993	68
1994	56
1995	60
1996	56
1997	59
1998	84
1999	58
2000	63
2001	41
2002	43
2003	41
2004	41
2005	43
2006	43

2007	30
2008	34
2009	30
2010	30
2011	40
2012	69
2013	73
2014	67
2015	66

Table F. Data for figure 14. Number of released captive-bred Lesser White-fronted Geese in Fennoscandia in the period 1981-2015.

Year	# released Sweden	# released Norway	# released Finland	# French-project
1980				
1981	11			
1982	28			
1983	37			
1984	33			
1985	22			
1986	13			
1987	16			
1988	12			
1989	15		5	
1990	12		25	
1991	9		24	
1992	0		28	
1993	0		17	
1994	30		16	
1995	20		6	
1996	21		15	
1997	27		7	
1998	25			
1999	17			30
2000	0			
2001	0			
2002	0			
2003	0			
2004	0			
2005	0			
2006	0			
2007	0			
2008	0			
2009	0			
2010	5	5		

2011	10	6		
2012	28			
2013	50			
2014	55			
2015	65			
SUM	561	11	143	30

Table G. Data for figure 23. Maximum numbers of Lesser White-fronted Goose of feral origin in the Netherlands and Belgium 2002-2015 (source: Waarneming.nl, Waarnemingen.be).

Year	Belgium	the Netherlands
2000		
2001		
2002		1
2003	3	1
2004	1	5
2005	1	10
2006		2
2007		8
2008	2	5
2009	2	7
2010	1	2
2011	2	10
2012	3	2
2013	1	2
2014	1	15
2015	1	4

Table H. Data for figure 25. Population trajectories for the original wild Lesser White-fronted Goose in Sweden and the Swedish reintroduced population as assessed during winter in the Netherlands

Year	Spring counts in Västerbotten 1975-1997	No. pairs Sweden	Swedish national estimates of no. of breeding pairs in original population, plotted as ind.	Winter counts of the reintroduced population in the Netherlands
1975	13	100	200	
1976	35			
1977	6			
1978	9			
1979	3			
1980	3			
1981	12			
1982	18			
1983	5			
1984	6			

1985	13			
1986	6			
1987	2			
1988	8			
1989	3			24
1990	9	10	20	20
1991	5			15
1992	0			21
1993	0			22
1994	1			49
1995	4			55
1996	5			47
1997	7			65
1998				69
1999		2	4	74
2000				102
2001				83
2002				98
2003				122
2004				123
2005				101
2006				91
2007				123
2008				109
2009				112
2010				97
2011				127
2012		2	4	67
2013				45
2014				45
2015				43

Table I. Data for figure 26 and 27.

Year	Maximum counts, Västerbotten in spring	Winter counts in the Netherlands of the reintroduced population	Västerbotten in spring - Olsson & Wiklund (1999)
1910	10		
1911			
1912			
1913			
1914			
1915			
1916			
1917			

1918	
1919	
1920	
1921	
1922	
1923	200
1924	
1925	
1926	
1927	
1928	1
1929	
1930	20
1931	
1932	
1933	
1934	
1935	
1936	12
1937	
1938	200
1939	
1940	800
1941	
1942	1
1943	
1944	
1945	1
1946	
1947	
1948	20
1949	150
1950	10
1951	1
1952	
1953	2
1954	50
1955	32
1956	26
1957	
1958	24
1959	28
1960	14
1961	16
1962	36
1963	22

1964	9		
1965	6		
1966	16		
1967	7		
1968	11		
1969	6		
1970	17		
1971	15		
1972	6		
1973	7		
1974	5		
1975	7		13
1976	24		35
1977	5		6
1978	5		9
1979	4		3
1980	5		3
1981	9		12
1982	11		18
1983	5		5
1984	4		6
1985	5		13
1986	5		6
1987	4		2
1988	3		8
1989	3	24	3
1990	9	20	9
1991	2	15	5
1992	4	21	0
1993	3	22	0
1994	2	49	1
1995	5	55	4
1996	12	47	5
1997	8	65	7
1998	5	69	
1999	4	74	
2000	2	102	
2001	2	83	
2002	2	98	
2003	4	122	
2004	4	123	
2005	22	101	
2006	9	91	
2007	12	123	
2008	11	109	

2009	6	112
2010	8	97
2011	14	127
2012	30	67
2013	17	45
2014	11	45
2015	20	43
2016	20	

Table J. Data for figure 28 (+29 & 30). Population trend for the Swedish reintroduced Lesser White-fronted Geese based upon counts during winter in the Netherlands.

Year	Number released Sweden	Peak count the Netherlands
1981	11	
1982	28	
1983	37	
1984	33	
1985	22	
1986	13	
1987	16	
1988	12	
1989	15	24
1990	12	20
1991	9	15
1992	0	21
1993	0	22
1994	30	49
1995	20	55
1996	21	47
1997	27	65
1998	25	69
1999	17	74
2000	0	102
2001	0	83
2002	0	98
2003	0	122
2004	0	123
2005	0	101
2006	0	91
2007	0	123
2008	0	109
2009	0	112
2010	5	97
2011	10	127

2012	28	67
2013	50	45
2014	55	45
2015	65	43

Table K. Data for figure 33-36. Monthly maxima Sweden, the Netherlands, Denmark, Belgium, France, Germany, Norway.

Month	SWEDEN	NETHERLANDS	DENMARK	BELGIUM	FRANCE	GERMANY	NORWAY
December 2015						1	
November 2015	6	34				1	
October 2015	8	34					
September 2015	28	10					2
August 2015	34	2	1				2
July 2015	28	1					
June 2015	19	2					
May 2015	36	2	1			1	4
April 2015	49	2	4			1	2
March 2015	9	3	2			2	
February 2015	0	47	5			3	
January 2015	0	25	1			2	
December 2014	5	30	5			2	6
November 2014	21	31				1	6
October 2014	26	31	2				7
September 2014	39	7					7
August 2014	40	3					6
July 2014	28	2					
June 2014	17	2					
May 2014	28	2	1				
April 2014	30	2	1				1
March 2014	1	23	1			1	
February 2014	0	37				2	
January 2014	0	38					
December 2013	6	37				1	
November 2013	7	29					
October 2013	11	31	1				
September 2013	43	5				2	4
August 2013	37	3					1
July 2013	37	2					
June 2013	31	1					
May 2013	31	2	1				
April 2013	71	2	9				
March 2013	2	50				1	
February 2013	0	45				1	

January 2013	0	45		1		2	2
December 2012	0	46				1	
November 2012	6	40				1	
October 2012	29	49				1	
September 2012	56	2					1
August 2012	37	2					
July 2012	5	2					
June 2012	7	2					
May 2012	101	1	1				1
April 2012	105	2	1				
March 2012	6	103	1			2	
February 2012	1	97	1	1			
January 2012	0	107	1	2		1	
December 2011	3	88				1	
November 2011	1	91					
October 2011	116	77	3				
September 2011	105	3					
August 2011	109	10					
July 2011	1	2					
June 2011	11	2					
May 2011	55	1	6				
April 2011	68	1	6				1
March 2011	3	88					
February 2011	0	58					
January 2011	0	59		1			
December 2010	0	43					
November 2010	1	74		1			
October 2010	6	70					
September 2010	80	2					1
August 2010	64	1					
July 2010	1	3					
June 2010	31	3					
May 2010	74	1					
April 2010	108	1	67				
March 2010	1	92		1			
February 2010	0	68		1			
January 2010	0	50		1			
December 2009	0	65		1			
November 2009	2	59					
October 2009	55	72					
September 2009	101	1					
August 2009	101	2					
July 2009	12	4					
June 2009	11	2					
May 2009	70	1					
April 2009	69	2	1				

March 2009	2	17		1	
February 2009	0	67		1	
January 2009	0	31		1	3
December 2008	2	39	1	1	2
November 2008	5	46			
October 2008	7	42	10		
September 2008	20	2			
August 2008	69				
July 2008	20				
June 2008	21	2			
May 2008	70	3			
April 2008	65	1	1		
March 2008	3	57			
February 2008	1	68	2		
January 2008	0	67			
December 2007	0	61			
November 2007	1	50	2		
October 2007	9	60	7		
September 2007	78	7			
August 2007	90	2			
July 2007	18	2	1		
June 2007	24	1	1		
May 2007	50	1			
April 2007	48	7	2		
March 2007	2	32	1		
February 2007	2	33			1
January 2007	0	45			
December 2006	1	63			
November 2006	2	59	3		
October 2006	42	40			
September 2006	76	2			
August 2006	75	2			
July 2006	3	2			
June 2006	21				
May 2006	60	2	1		
April 2006	3	1			
March 2006	2	14			
February 2006	0	40	1	1	
January 2006	0	43		1	
December 2005	0	52			
November 2005	2	50	1		
October 2005	37	60	1		
September 2005	79	3			
August 2005	59	1			
July 2005	16				
June 2005	18	1			

May 2005	50	1	1	
April 2005	32	1	2	
March 2005	2	20	1	
February 2005	0	33		
January 2005	0	30	1	
December 2004	0	33	1	
November 2004	1	41		
October 2004	52	48	1	
September 2004	84	1		
August 2004	84	1		
July 2004	22	1		
June 2004	12	1	1	
May 2004	37	1	1	
April 2004	37	5	3	
March 2004	17	32	1	
February 2004	0	34		3
January 2004	1	35		1
December 2003	2	41		2
November 2003	1	49	1	
October 2003	25	57	1	
September 2003	69	1		
August 2003	70	1		
July 2003	18			
June 2003	26			
May 2003	38		15	
April 2003	25	1	5	
March 2003	23	26	8	
February 2003	0	12	1	
January 2003	1	24		3
December 2002	1	20		3
November 2002	2	34		
October 2002	8	32		
September 2002	72	32		
August 2002	60		1	
July 2002	14	1		
June 2002	15	1		
May 2002	40	1	1	
April 2002	27	4	2	
March 2002	10	34	1	
February 2002	1	16		
January 2002	1	16		1
December 2001	1	11		1
November 2001	3	19	1	
October 2001	22	24	1	
September 2001	46	1	1	
August 2001	27		1	

July 2001	11				
June 2001	5	1			
May 2001	25	1			
April 2001	17	3	1		
March 2001	4	15	1	1	1
February 2001	1	18	1	1	1
January 2001	1	16	1		1
December 2000	3	10	2	2	1
November 2000	9	16	1		2
October 2000	17	15			1
September 2000	17	1			
August 2000	48				
July 2000	11				
June 2000	5				
May 2000	12	1			
April 2000	11	2	1		
March 2000	1	9	1	1	
February 2000	2	7	1		
January 2000	1	16	1	1	

Table L. Data for figure 37. Wintering of Lesser White-fronted Geese in Sweden shown as maximum counts each month between November to February for the years 2000-2016.

"winter"	November	December	January	February
1999-2000			1	2
2000-2001	5	5	1	1
2001-2002	3	1	1	0
2002-2003	2	1	1	0
2003-2004	1	1	0	0
2004-2005	2	0	0	0
2005-2006	2	0	0	0
2006-2007	2	1	0	2
2007-2008	1	0	0	1
2008-2009	5	2	0	0
2009-2010	2	0	0	0
2010-2011	1	0	0	0
2011-2012	1	3	0	1
2012-2013	6	0	0	0
2013-2014	7	6	0	0
2014-2015	21	3	0	0
2015-2016	7	0	1	0

Table M. Data for figure 39. Minimum number of hybrid Barnacle Goose x Lesser White-fronted Goose individuals observed annually in Sweden in the years 1985–2015.

Year	# 1cy	#ad/subad
1985	1	0
1986		
1987		1
1988		
1989		1
1990		1
1991		2
1992		1
1993		1
1994		5
1995		
1996		
1997		
1998		
1999		1
2000		1
2001		2
2002	2	1
2003		1
2004	8	4
2005	4	11
2006	6	10
2007	5	4
2008	5	10
2009	7	8
2010	6	7
2011	11	5
2012	5	5
2013	7	9
2014	4	11
2015		4

Table N. Data for figure 40. Population trend for the Swedish reintroduced free-flying population.

Winter	Peak count the Netherlands	Hybrids
1989-90	24	2
1990-91	20	
1991-92	15	3
1992-93	21	
1993-94	22	
1994-95	49	
1995-96	55	
1996-97	47	

1997-98	65	
1998-99	69	
1999-00	74	1
2000-01	102	
2001-02	83	2
2002-03	98	
2003-04	122	1
2004-05	123	19
2005-06	101	15
2006-07	91	8
2007-08	123	3
2008-09	109	9
2009-10	112	17
2010-11	97	15
2011-12	127	11
2012-13	67	12
2013-14	45	14
2014-15	45	8

Table O. Data for Figure 46 & 47. Annual estimate of juveniles produced per adult in the winter population the preceeding winter for the Swedish reintroduced population and the wild Fennoscandian populations for the years 1994-2015

Year	the Netherlands	exp. Greece	juv Sweden	juv Norway	juv/ad winter Sweden	juv/ad Fennoscandia
1994	49.000	69.951	15	33		
1995	55	94.88132	0	67	.00000000	0.957812
1996	47	63.65148	10	23	0.181818	0.242408
1997	65	71.95482	8	32	0.170213	0.502738
1998	69	93.27236	0	31	0	0.430826
1999	74	61.62752	13	17	0.188406	0.182262
2000	102	56.56762	14	2	0.189189	0.032453
2001	83	59.93238	15	38	0.147059	0.671762
2002	98	59.16834	21	34	0.253012	0.567306
2003	122	53.00282	20	27	0.204082	0.456325
2004	123	43.55342	11	12	0.090164	0.226403
2005	101	47.82906	6	16	0.04878	0.367365
2006	91	52.23878	13	23	0.128713	0.480879
2007	123	49.75938	19	33	0.208791	0.631715
2008	109	38.03808	0	13	0	0.261257
2009	112	32.6366	38	10	0.348624	0.262894
2010	97	48.3856	11	35	0.098214	1.072416
2011	127	62.83424	38	44	0.391753	0.909361
2012	67	66.24474	3	9	0.023622	0.143234
2013	45	69.75634	1	9	0.014925	0.13586
2014	45	65.74886	11	11	0.244444	0.157692
2015	43	106	3	74	0.066667	1.125495

Table P. Data for Figure 49. Age and sex distribution of Lesser White-fronted Geese released in Sweden 2010-2014.

1 CY males	13
2 CY males	10
1 CY unknown sex	24
2 CY unknown sex	1
male unknown age	44
female unknown age	29
unknown age / sex	92

Table Q. Data for Figure 50. Maximum numbers of Lesser White-fronted Geese reported in spring (April-May, pale blue columns) and autumn (July-October, dark blue columns) in Hälsingland district in Sweden 2001-2015.

Year	Spring (April-May)	Autumn (July-October)
2001	24	42
2002	18	61
2003	34	66
2004	31	77
2005	35	64
2006	31	76
2007	42	65
2008	65	69
2009	62	100
2010	63	61
2011	53	104
2012	92	55
2013	46	37
2014	26	37
2015	24	36

Table R. Data for Figure 51. Maximum numbers of Lesser White-fronted Geese reported in spring (April-May, pale blue columns) and autumn (July-October, dark blue columns) in Uppland district in Sweden 2001-2015.

Year	Spring (April-May)	Autumn (July-October)
2001	7	17
2002	1	13
2003	4	24
2004	8	46
2005	13	30
2006	12	40
2007	19	27
2008	21	21
2009	6	75
2010	47	54
2011	3	76
2012	19	41
2013	20	35
2014	2	25
2015	2	24

ERRATA

2016-11-14:

In chapter 7.4. (p 133, AEWA IWG Trondheim meeting April 2016) it is stated that option 2 (= exclusion of the Swedish population from the AEWA action plan) would have been the only acceptable option for Sweden. This was erroneous; Sweden preferred option 1 (but could have considered option 3 as a last resort). Norway, Finland etc. were in favor of option 2.