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LWFG-Bulletin

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Editor's note:

Backpacks, rings and the future

Lauri Kahanpää

The happy event of the year in Lesser White-fronted Goose proctection was the first successful release of a captive Lesser White-fronted Goose in Finland. The transmitter backpack of the adoptive father went silent but the old trick, colour ringing, revealed that at least one of the goslings made it all the way to the Netherlands, exactly as planned. Also monitoring of the Russian Lesser White-fronted Goose population was successful: Of the three birds which Vladimir Morozov equipped with satellite transmitters (Thank you, BirdLife Norway for the equipment and service) one made a full migration round trip to Iraq and back to the Polar Urals. For science this is great but from the protection viewpoint we feel sorry for what came out: only one bird survived migration, and also that one made a very dangerous journey.

Now the release experiments in Finland are successfully done and their scientific and juridical consequences have been evaluated. We are ready and welcome to continue the project in Lapland. Final genetic tests and an evaluation scheme for their outcome will be available in spring 2006. Also, construction work at the farm in Hämeenkoski is almost completed. (Thank you, volunteer craftsmen.) All this means that there will be a shift in the direction of activity of our society: Reintroducing the Lesser White-fronted Goose in Finland is beginning in full scale. To function well under the new circumstandes, our organization was renewed at the annual meeting. I welcome my successor, PhD Antti Haapanen from Helsinki, to the position of Chairman. During 2005 the statutes of the association will be changed so that the number of board members will rise from three to five. New active people are needed, since carrying out the actual release program is a cumbersome business. Finding suitable adoptive parents, be they Barnacle Geese or ultralight aircraft, is the hardest part. Also our PR-work must be intensified; a lot of people still live in the illusion that the reintroduction programme could be delayed for a few years and then carried out using freshly caught birds, without risking to completely

loose the species. In reality, starting a new breeding programme from newly caught natural birds would be an extremely difficult, costly and slow process. At the current state of affairs we cannot even test these possibilities in practise, since catching LWfG failed both in 2003 and 2004 already on the bureocratic level, and importing birds from Russia now is prohibited because of the avian influenza. A realistic calculation of the delay time igives an estimate of 20 years. If current trends prevail, no more than one third of the global population would survive by 2025. Theoretically ten original individuals would live in Scandinavia together with some 250 birds originating from Swedish reintroduction. Things could go even worse, of course. In spite of these expectaions, the farm in Hämeenkoski is ready and willing to house an independent fresh flock, but we will not give up breeding current stock as well.

BirdLife, Wetlands International, WWF, other nature conservation NGO:s, hunter's organizations and various national and international authorities should be informed of these facts.

Recently, there has been some progress towards cooperation. A national and an international seminar at the Helsinki University Biological Station in Lammi already unanimously deemed reintroduction unavoidable with a high probability. Using ultralight aircraft as foster parents was generally seen as worth while to test. An experimantal catching/breeding of Russian birds was recommended to find out what is possible. Our breeding know how,incarnated in the person of Pentti Alho, was considered valuable and we were recommended to hire a second person to help at the farm and to learn from him.

The Friends of the Lesser White-fronted Goose will go on working along these lines expecting enthusiastic support of all partners.

Lesser White-fronted Geese

Finny in the Netherlands

Pentti Alho and Eero Peltonen

A juvenile Lesser White-fronted Goose, released in Finnish Lapland in 2004, was later observed in the Netherlands. Her satellite transmitter tagged adoptive parent birds were lost.

On a day in July 2004, we loaded our van with very valuable cargo and started the 1000 km drive towards Enontekiö in Finnish Lapland. The first Finnish Lesser White-fronted Gosligns imprinted on Barnacle Geese, four in number, were on their way towards freedom.

The male parent was carrying a satellite transmitter, a Wildlife Computers SPOT3 left over from the 2003 experiment with a pure Barnacle Goose family. At first, we were not quite sure whether its programming had been successful since we had had computer problems until the day before, but in Jyväskylä we could borrow a 400 MHz receiver from a shop called EVP-elektroniikka and confirm that the signal was fine.

A long transport of geese contains some risks of which maybe the worst is the risk of overheating. In hot weather birds may die. Therefore, nightly transports are to be favoured, but we had a cool day and of course it was late in the evening before we arrived at Enontekiö. Since there had been advance information, the press was present, and we had to talk to the journalists before carrying out the actual release. That again was a completely undramatic event. The birds were allowed to calm down for a while in a fencing by the lake shore and then they were set free. In a minute they swam away disappearing among the reeds.

It was the first time when Lambart von Essen's ingenious method was tested in Finland. The goslings were imprinted on foster parents who would guide them to safe wintering grounds in the South-West instead of letting them fly their usual route over Russia to Asia. These birds would never be shot in Russia or Iraq.

The 2003 experience had tought us to rely on the techology of satellite tagging. (Cf. 2004/2), so we believed we would soon observe the family's autumn migration on the ARGOS maps. Would they fly over Sweden or over Finland? Or would they possibly be killed by a bird of prey like the 2003 birds. This was what we were wondering while driving home through the night with fog and rain. But all guesses were false. At first, ARGOS did not react on our birds at all. Then it turned out that there had been an interruption in the satellite system's operation, and we got some data. Our transmitter had been flying around near the relase site and then unexpectedly started migration due North. To Norway. There the signal faded away and was newer heared again. No later visual observation of the parent birds exists, neither in the Netherlands nor later at the original nest in Finland.

Snow fell. Not until a few days before Christmas did we recieve e-mail from the Netherlands: "I am living in the south-western part of the Netherlands, about 30 km south-west of Rotterdam on the island the Hoeksche Waard. In winter time our area has a good reputation for LWfG. There are two area's, the best spot is Het Oude Land van Strijen in the centre and the Korendijksche Slikken (KS) at the south-west end. I live near the latter. Here the KS and several other areas nearby are the wintering area for many thousands of Barnacle Geese. Same was last Sunday, it was at the Westerse Laagjes, close to the KS. Here a I found a juvenile LWfG with a unknown colour ring combination. ..... Enclosed some pictures I took. Does the bird belong to the Finnish project?? Looking forward to receiving your reaction with special interest. Gert Huijzers." And YESS!! It was one or our goslings. After our answer, Gert Huijzers wrote more: "Last Sunday I was lucky, because I found it quite easily near the road at the edge of a group of 8000 Barnacles. Due to the unknown ring-combination I was extra alert and eager to take some pictures, though the light was poor because of the early morning and fog. I am extra glad, knowing now what it means for you and your friends."

Later the bird was named Finny. The observation arose great interest in The Netherlands, and people started to carefully search for Finny's sisters and parents. However, they were never found. On Dec. 27, Finny was observed near a flock of some 3000 Barnacle Geese. She was never seen together with the Swedish project birds. But her migration would not have been possible without some experienced bird guiding her. Probably her step mother flew with her most of the way and was lost only later. Or she may have joined a flock of migrating wild Barnacle Geese. Finny herself is not satellite tagged, so we don't know whether she may have returned to Finland. But in early spring she was observed north of the place where she had stayed over winter, so her migration had begun. Of course, we hope to hear from her again, but the probability for her to be seen in Lapland is minimal, and we have to wait for possible new Dutch observations. You can find more data, in particular the names of observers, on the pages http://www.dutchbirding.nl/. We take the opportunity to express our sincere gratitude to the Dutch ornithologists, whose observation skills made this sunshine story possible.

In this summer 2005 we did not release any new goose family but we prepare for beginning a full size

reintroduction programme in 2006. Since the method is working, there is hope that a larger number of released birds will ultimately lead to the re-establishment of breeding Lesser White-fronted Geese in our country.

Spring migration 2005

collected by Lauri Kahanpää

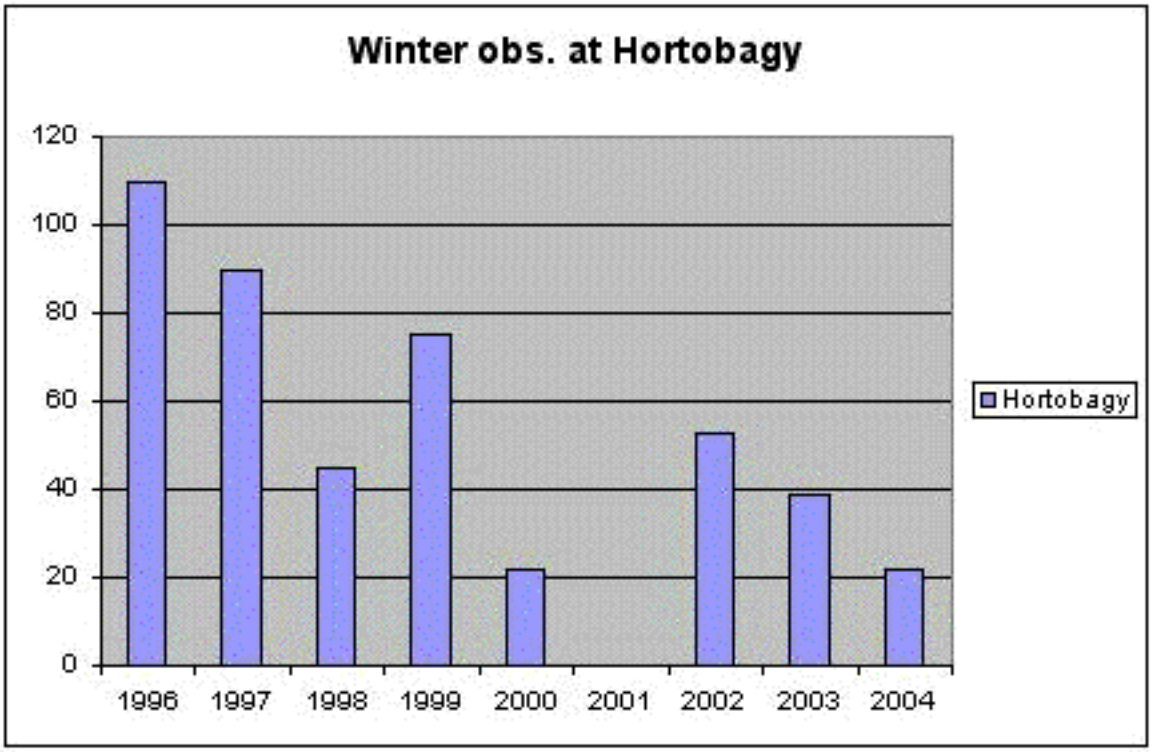
According to recent observations, the Lesser White-fronted Geese in Europe continue their annual average five per cent decline. There is one exception , the Swedish reintroduced birds. In Finland, only one bird of five remains since the fatal meeting in 1998, where a working group of WWF Finland decided to concentrate efforts on rescuing these birds by "natural means" and to stop the ongoing reintroduction programme instead of improving their methods.

In the previous issue of the Bulletin I gave a rather detaled description on the trends and current status of migrating LWfG in Europe. Therefore, an update with diagrams is sufficient today. The numerical data is again mainly taken from the web pages of BirdLife Finland and from the page http://www.piskulka.net/Recent observations.htm of the Norwegian Lesser White-front monitoring project. More details and updates are available on our observation page.

Greece

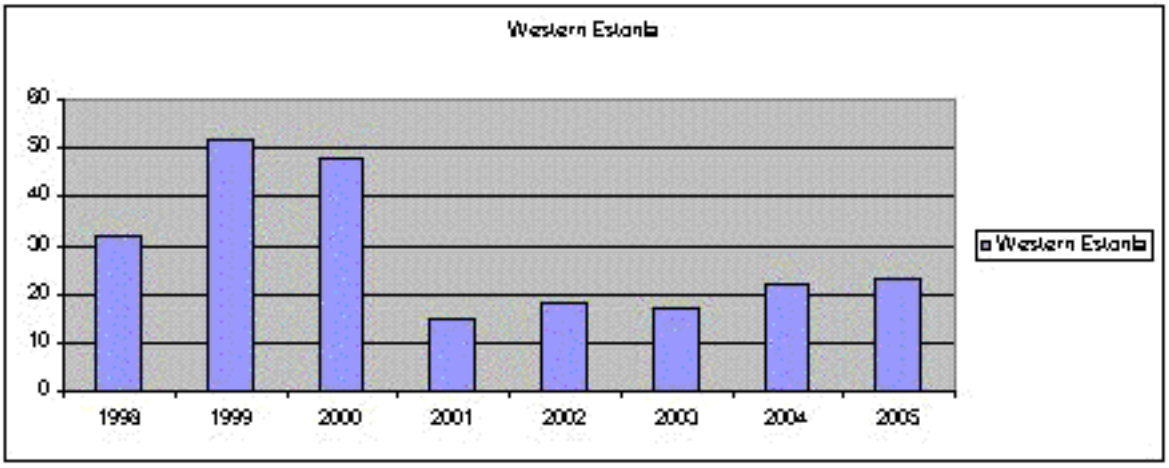
The intensive monitoring year at the Evros delta has ended, so there is no reliable data is available for 2005.

Hungary



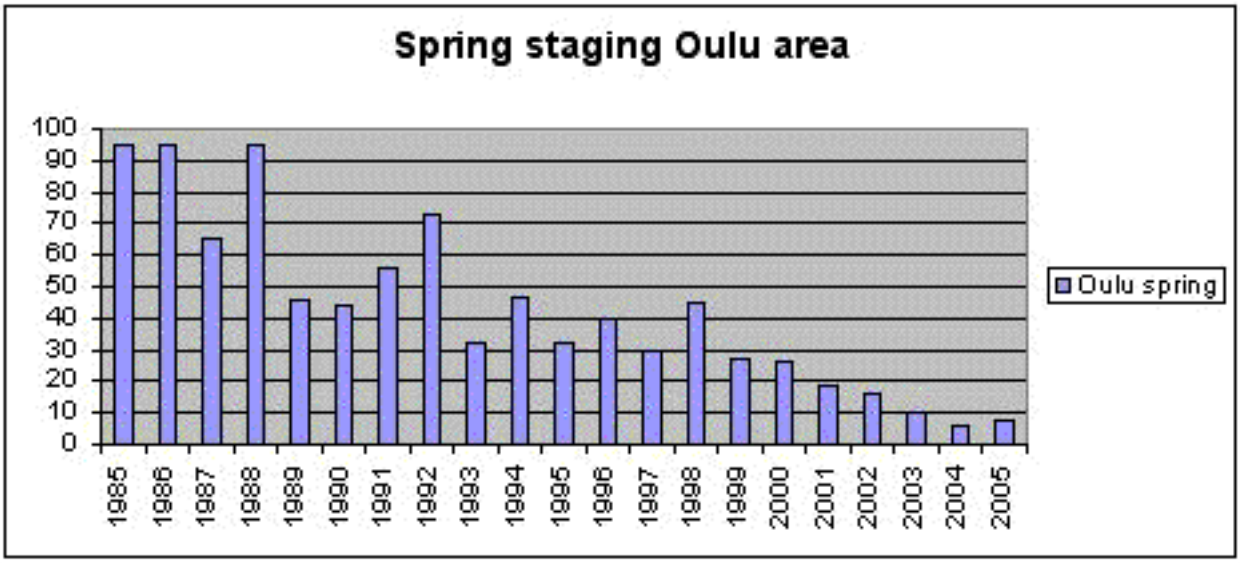
In April 2005, as many as 35 Lessers were seen in Hortobágyn National Park. In autumn 2004 the reported total number was around 20. (Source: www.birding.hu).

Estonia



In April-May 2005 at least 24 and up to 29 individuals were seen, of which only two were young birds. The flock at Haeska by the Matsalu Bay (14 ind.) continued migration North in the evening of May 6. Four of the LEfG were observed in Eastern Estonia near Tartu, so the Western Estonian number adds up to 20-25 individuals. Last year there were 22 birds in the Haeska main flock.

Finland



The largest flock was observed on May 11.th at Säärenperä in Siikajoki in the Oulu area. : three pairs and one young bird. One bird carried Norwegian color rings. The traditional staging sites on the island Hailuoto (Karlsö) were empty again, but one more LWfG was seen already in April in a mixed flock of Bean, Greylag and Canada Geese in Eurajoki (more to the South). A lonely bird was observed in 2003 also.

Sweden

Åke Andersson will give his report in the next issue of the Bulletin.

Norway

May 13.th was the first day with LWfG observed in the customary area, theValdak Marshes at Porsanger Fjord. On May 25. they reached their maximum of 29 (last year 31). Five had color rings. Three were young.

Sweden's Action Plan Draft Meeting

Lauri Kahanpää

On the 15:th of February, 2005 Sweden's nature conservation authority Naturvårdsverket and the Province of Norrbotten arranged a national/international meeting in order to collect opinions on their LWfG protectioin plan. Also the Friends were invited to Luleå.

It was a good mneeting. The Action Plan draft written by Åke Andersson was sent in advance to the 20-30 invited speakers from Sweden, Norway and Finland, all countries where Swedish is understood. At the meeting basic questions, not the details, were at the focal point. All in all the meeting clarified things and was also enjoyable as a social event. Later revised versions of the draft will be sent to us for inspection before being finally approved by Naturvårdsverket.

The plan draft

The plan is a short range one affecting just the years 2005-2008. It will not have the status of a law but just serve as a guide for decisions made at Naturvårdsverket on whose home page it will be published in due time.

On the 30 sides of the document, the following topics are mentioned:

- General information on the species, its biology, ecology and problems
- Genetics relevant for protection
- Range and population history
- Formal protection status and implementation of protection in various countries
- The obsolete EU Action Plan
- Known and other possible reasond for decline
- Previous protection measures
- Goals, hopes and risks on a short time scale
- Goals, hopes and risks in the long run
- Suggested actions and their importance
    - international cooperation
    - research
    - monitoring
    - prevention of disturbance
    - evaluation of current protection measures
    - protected areas
    - other potential range areas
    - restocking
    - reintroduction
    - avoiding negative actions
    - effect on other species'
- Partner's responsibilities
- Funding

The plan is just a draft but it contains several viewpoints of interest. Much of it could be copied to the Finnish plan going to be set up this year. Seen from Sweden, the main question is what should be the future of the current Swedish LWfG population created by Lambart von Essen's reintroduction programme. How will they interact with the remaining Norwegian LWfG?

The draft mentions no subspecies of the LWfG but does pay attention to the observed alien *(A. albifrons)* genes in some captive LWfG. The free living Swedish birds originate with the captive birds, but their genetic composition has never been inspected directly.

The goal of the plan draft is set at 200 adult LWfG living free in Sweden by 2008. The east migrating original Scandinavian population is not believed to increase. Since all other protection measures seem to fail, continued restocking is seen as a way out. Annual releases of about 20-30 genetically clean checked LWfGT are planned. New captive birds should be imported from Russia; there is no hope to get any from Norway. Von Essen's Barnacle goose foster parent method is recommended and described in length, but also experiments with ultralight aircraft are considered necessary as a potentially better

alternative.

Opinions

Naturvårdsverket ideally prefers the original population, but does not believe in their future. Protection of the new Swedish population is also seen as a high priority. CXontinued restocking depends on the availabaility of suitable goslings.

Morten Ekker (Norway) complained, that the plan actually prefers the reintroduced birds. He suggested that we should talk of "Scandinavian" instead of "Norwegian" original birds and include the Kola peninsula LWfG in this population. On the other side he would prefer to catch or kill the "contaminated" Swedish LWfG. (That idea got minimal support.) Actions benefiting the original birds should in his opinion be clearly listed in the Swedish Action Plan. (Nobody really could make any good suggestions for items in such a list.) all Norwegians strongly opposed new releases of captive LWfG fearing genetical interaction with the original birds. (Genetical interaction between both Scandinavian populations has possibly occurred already.)

Jorma Pessa presented the official **Finnish** view. He described past efforts and mentioned that the future Finnish Action plan will be compiled on the basis of the renewed International Plan to be set up by the EU. It is too early for final decisions with respect to continued reintroduction, not to mention individual goslings or their genetic background. The Ministry of the Environment (Mr. Osara and Mr. Heikkinen) considers the release of contaminated idividuals to be in conflict with Finnish law. Release of clean birds can be considered in case the natural population goes extinct.

I myself spoke for the **Friends of the Lesser White-fronted Goose** reminding my audience of the facts that the LWfG is extinct in Finland already and that it still is possible to rescue some original Scandinavian genes, if such exist, by making Norwegian origin birds migrate to the South-West, which would lead to the creation of a viable mixed Swedish-Norwegian LWfG population. My Power Point slides are at http://www.math.jyu.fi/%7Ekahanpaa/Kotisivut/AnserErythropus/Presentation1.ppt

The representatives for **WWF Finland (Merilä, Tolvanen)** and **Minna Ruokonen** from Oulu announced results of their **recent genetic studies**. In their Swedish study material approximately one bird of four was carrying suspect mitochondriae. Distinguishing between nuclear DNA from Greater and Lesser White-fronts is delicate, but some markers were found which were present in all GWfG and missing in all natural or museal LWfG samples. These also indicate hybridization in some captive birds. About half of the captive birds could not be identified as different at all from the natural samples. Of course also the "clean" birds may carry undetected contamination. There was no consensus on the probability and importance of this. Russian and Scandinavian birds had similar nuclear DNA, but minor differences in their mitochondraial DNA could be detected. This is what can be expected: the main genettic interaction goes via males but mitochondriae are inherited maternally. Juha Merilä's opinion was that the detected phenomenon is negligible but still he advocated to consider the Scandinavian birds a separate management unit.

The Swedish study material was collected prior of division of the Swedish flock. Few people at te meeting were aware of the disastrous effects of that separation. (Cf. 2003 - No 1 ja 2004 - No 2)

Per Hansson (Västerbottens OF) presented the following thought: If hybridization has taken place, then the first generation hybrids will reproduce with pure partners giving rise to 1/4 hybrids. In the third generation, contamination is down at 1/8 which is 12,5 per cent. Later on, hybrids will probably start to reproduce with each other, so the cleaning process becomes slower and alters in nature with natural selection playing a role. But already at this stage we have almost 90 per cent correct genes. Should the possibly valuable genetic information in these be sacrified in order to get rid of the unwanted ones? He got no answer.

Some more ideas presented during the discussion

- A captive populationmust encompass at least some 200 lintua, to guarantee sufficient genetic variation. (Minna Ruokonen)
- Some Swedish captive birds carry Greylag Goose mitochondriae. Greylags often are partners in hybridizations. (Minna Ruokonen)
- Nobody seems to have understood how very difficult it is to begin LWfG breeding from scratch.
- The meeting's chairman summarized the questions:

#. What should really be done to save the famous natural Scandianvian population? What should be written in the plan? (Naturvårdsverket's answer: Just reserve money for the purpose and wait for bright ideas.)
#. Under what conditions should restocking be continued? Isi t this that you are quarreling about? (There was no comment on this, but evidently this is the main question.)

Foreseeing the future

Lauri Kahanpää (Talk at Wetlands International's conference in Odessa 2004)

We all know about the sad fate of the Dodo, the Great Auk, and the Passenger Pigeon. Since year 1600, more than 80 other bird species have died out, and today many more live on the verge of extinction because of the ever-increasing human population, or because of a specialized way of life. Is there anything we can do to halt the trend? Removing the threats should be preferred to all other means of conservation, but unfortunately that is not always possible. One insurance against extinciton of species is breeding them in captivity for later restoration back in Nature, simultaneously avoiding the threats.

For the Lesser White-fronted Goose *(Anser erythropus)*, already extinct in my home country, Finland, and decreasing everywhere, the threat is the hunting pressure along its migration to and in Central Asia. Therefore restocking must be combined with a manipulation of the migration routes. To make wise decisions, we have to have an idea of the possible impact of our actions on the future. To estimate the future, we have to know some history. So let us list the facts:

Basic facts

- Fifty years ago, Lesser White-fronted Geese were still common prey for hunters in Northern Europe but now they are rapidly becoming the first bird species to have disappeared from our continent in modern times. Very few survive in Norway and European Russia. In Asia, ten per cent of the original population survive. Outside the Palearctic, there are none.
- The remainders of the Norwegian population are closely monitored, showing an average annual decline of more than 5 per cent. In August 2003, 47 exx, including 27 goslings in seven broods were observed at Valdak, northern Norway. Counts of staging birds near Oulu, Finland show the trend: 26, 27, 19, 10.
- Restocking programs were started in Sweden and Finland. The Swedish released a total of 350 Lesser White-fronted Geese, imprinted on Barnacle Geese *(Branta leucopsis)* foster parents to guide them to safe wintering in Western Europe. They now breed, and their population is naturally increasing. About 40 nestings have been recorded. They are building up a new culture of safe migrating. A comparable Finnish program failed, since it did not use foster parents. The Friends of the Lesser White-fronted Goose now run a Swedish style program in Finland.
- Genetic differences between captive and wild Lesser White-fronts are negligible in chromosome DNA of most birds. In mitochondrial DNA, some captive geese have shown differences compared with wild samples, the most serious being indications of hybridization with White-fronted Goose *(Anser albifrons).* The wild Swedish population is genetically identical to the captive one. (For details see Bulletin 2003 / 1)

Input data and calculations

To foresee the future of the Norwegian and Swedish populations, we can simply believe in exponential population growth of non-saturated populations, or we can build a more elaborate mathematical model taking into account the variations in breeding success in relation to the bird's age. The latter was done by the author already in 2002 in order to find out, how many goslings should be released annually. Taking into account the cost structure of the program, we arrived at recommending the annual release of 80-100 goslings.

The population model is based on the following input data: (*A. erythropus* normally start breeding at age 3, that is in their 4:th cy.)

n = calendar year
rls(n) = number of released goslings in year n
fert = reproduction index = ratio of number of free born fledgrd goslings to number of parent pairs.
m-1 = estimated mortality in 1:st year
m-2 = estimated mortality in 2:nd year
m-ad = estimated mortality in successive years
12 = maximum age of Anser erythropus

initial values = number of birds in spring - summer of year 2001

The numerical input data were taken from the annual reports of the Swedish project. In particular the reproduction index 0,6 corresponds to the well documented breeding success of year 1999. A good estimate is important, since population growth is very sensitive to variations in the reproduction index on the long run (here after 10 years). Since all released birds were colour ringed and carefully monitored, a complete comparison could be done until year 2000. During the subsequent years without releases, this has gradually become impossible, since natural goslings are unmarked but interesting. Only total numbers and the ratio of young/ad birds can be observed. The input values of annual mortality could be calculated from the reports.

From this data we can on simple MS-Excel sheets successively calculate the following numbers:

2cy(n) = number of 1:st year old birds in spring - summer of year n
3cy(n) = number of 2:nd year old birds in spring - summer of year n
...
13cy(n) = number of 12:th year old birds in spring - summer of year n
SUM 4-13cy(n) = number of fertile birds in spring - summer of year n

We also produced charts displaying the calculated number SUM of free living fertile *A.erythropus*, in dependence of time under various assumptions on the input parameters.

Test and evaluation of model

The model's predictions can be compared with observations.

Obs							Model								Year
1cy	2cy	3c-y	4c-y	5c-y	SUM		1cy	2c-y	3c-y	4c-y	5c-y	6 cy	7c-y	SUM	
20					21		20							20	1995
21	12				32		21	15						36	1996
22	14	10			46		22	16	12					50	1997
18	13	12	10		53		18	17	13	11				58	1998
11	14	12	7	9	53		14	14	13	11	10			62	1999
							6	11	11	12	10	9		59	2000
							9	5	9	10	11	9	8	60	2001
20							11	7	4	8	9	10	15	63	2002
20					>80		12	8	6	3	7	8	22	67	2003
							12	9	7	5	3	6	27	70	2004
							12	9	7	6	5	3		72	2005

The total of 104 goslings in these 5 years corresponds to predicted 132 . This comparison indicates that the model is not very far from being correct. The over-estimation by 21 % should be tolerated, since it corresponds to a qualified guess of the number of goslings having escaped observation in relation to the fact that the number of parents is better known.

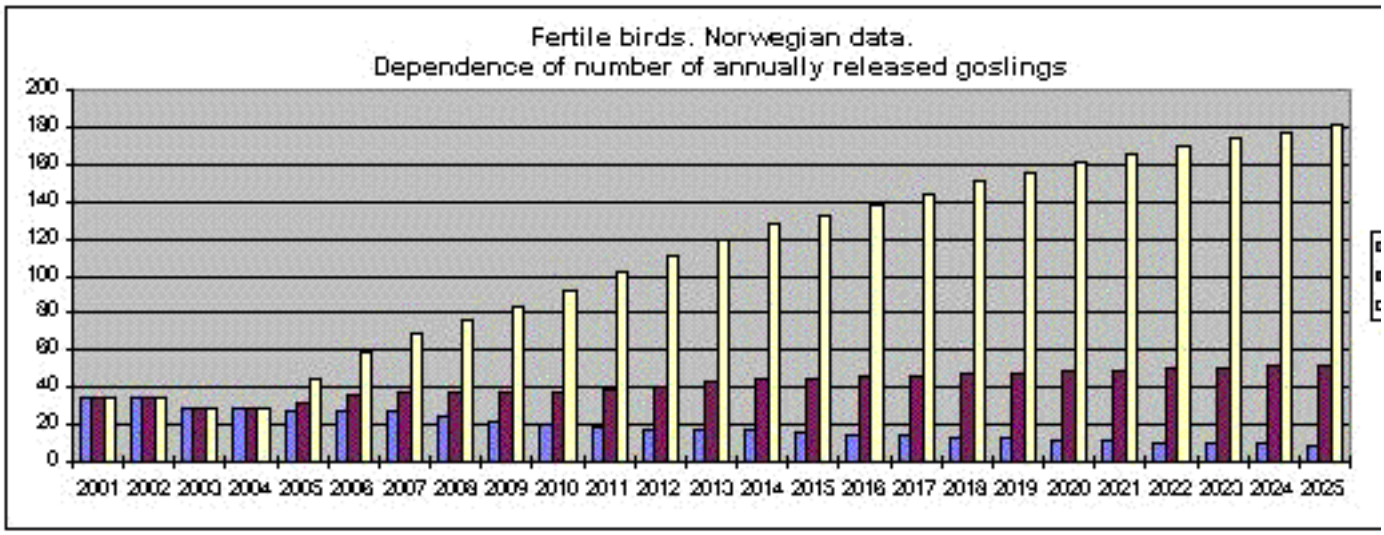
A closer look reveals: the model could be adapted closer to these observations by just slightly raising the 1. year mortality assumption. We prefer to leave it like it is. Instead we could present an improved

calcualtion taking into account random fluctuations in breeding and wintering success. Unfortunately, yet understandably, randomization will have a negative effect on growth expectations and shorten the theoretically expected survival time.

Comparing Swedish and Norwegian data

For comparison, the model was adapted to data for the remaining natural Norwegian east-migrating population. For obvious reasons, data on the Norwegian natural population is less reliable. The Norwegian input data was taken from [2]. Fresh data has lately reached the author without changing the overall picture. The Norwegian estimate on reproduction is as high as 1,2 , based on observations of the ratio of adult to juvenile birds at autumn staging. By the time of making up my calculations, this difference in comparison to the Swedish data was still unexplained, but today we have understood, that the difference was a systematical observation error: In August, non breeding Norwegian birds fly away to the East of the White Sea for moult. Therefore, they are not included in the number of adult birds, which is the denominator in the formula for the fertility index! But let us ignore this and continue with the overly optimistic prediction for Norway. The very high mortality in the first calendar year -- 0,7 -- was measured by a couple of indicators, whereas [2] simply calculates the average adult mortality -- 0, 165 –from the above data and the fact that the total population is shrinking at a pace of 5 % a year.

More interesting are predictions based on a hypothetical re-introduction of captive birds in the Norwegian flocks assuming equal mortality for natural and re-introduced goslings. This kind of re-introduction was attempted in the first unsuccesful Finnish re-introduction project [3].



A glimpse at the chart shows why such an attempt must fail as long as conditions on the eastern migration route remain as they are. On the chart, a starting population of 35 birds is depicted under the following common growth condition: a five per cent annual decrease, corresponding to the observed Norwegian trend. If no new birds were released, some 9 birds would remain after 25 years. By restocking with 20 birds annually, we could make the population grow to no more than 50 individuals in that time, and by an unrealistic release number of 80 goslings a year (two thousand goslings) one could theoretically reach only 190 individuals. Afterwards, the population decrease would continue towards zero again. Similar calculations for Swedish style reintroductions with positivre growth rates are discussed below.

Much energy should be spent on improving the Eastern wintering areas of course, but unfortunately no change seems to be in sight before the current Norwegian population of less than 40 fertile birds ([4] and [5]) has died out -- as the Finnish and Swedish already have.

The future in Finland

But the future of the Lesser White-fronted Goose in Finland does not only depend on these trends, since our program is promising results similar to those already obtained in Sweden.

Cost estimate and conclusions

The model seems to work well. It can therefore be applied to compare the costs for running the re-introduction program with different numbers of released goslings. To do this, we agree at a number of 600 free living geese in fertile age, producing annually about 100 young as a limit, when to stop re-introduction. The time it takes to reach this population size depends on the number of annually released goslings. The direct cost of running the project are not proportional to the number of goslings released annually, but rather they consist of an independent part of approx 30 000 EUR /year + 500 EUR for each gosling. Multiplying annual costs with the number of needed project years leads to the following total cost estimates:

annual releases:	20	30	50	80	100	400
years needed to reach goal	54	40	26	18	15	7
annual cost in 1000 EUR	40	45	55	70	80	285
total expenses	2160	1800	1430	1260	1200	2000

Releasing as many as 400 goslings each year is possible only if ultralight aircraft are used. This would have the great advantage of reaching the goals of the programme during an overseeable time. On the other hand, looking a the expenses one understands that an aircraft project is more expensive, but it can be made economically feasible, since an aircraft project is very much better capable of attracting sponsors than a comparable traditional project. But independently of the choice of foster parents, one must ask the question: where do we find such numbers of tested LWfG goslings. All in all the numbers make it very clear that there are no chances whatsoever to succeed in any reintroduction programme unless goslings of current captive origin are allowed to be used.

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[2] Aarvak, Tomas, Ingar Jostein Oien, Eugeny E. Syroechkovski Jr. and Irina Kostadinova: The Lesser White-fronted Goose Monitoring Programme, Annual Report 1997. --- Norwegian Ornithological Society Report No5-1997.

[3] Project LIFE97NAT/FIN/4098; Annual reports

[4] Aarvak, Tomas and Ingar Jostein Oien: Monitoring of staging Lesser White-fronted Geese at the Valdak marshes in 1999: -- WWF Finland Report no. 12 : Fennoscandian Lesser White-fronted Goose conservation project - Annual report 1999.

[5] Preliminary oral information on observations 2000

Lesser White-fronts in the Netherlands 2004-2005

Bertus de Lange, Pentti Alho and Erkki Kellomäki

Pentti Alho and Erkki Kellomäki visited the Northern part of the Netherlands and saw many Lesser White-fronted Geese. Meanwhile, the LWfG released in Finland was seen in the South. We thank our Dutch friends for their observations. More details are available on our observation page.

High numbers

The maximum day sum in winter 04-05 was our own observation of 62 individuals on Oct. 25. by Anjum. In the South part of the country there were even more: 70 LWfG were counted, if we add 51 at

Strijen 51and 19 at Korendijkse Slikken by New Year 2005. Just before on Dec. 30 there had been 51 in the south (Strijen) and 17 (Petten) + 17 (Goudswaard) in the North. This gives 75, which can be called the winter's total maximum count.

Local observations:

The observations below must be complemented with singular observations on 23 localities: generally one bird, never mote than 5.

The Northern sites: (Anjum, de Kolken and by Tibma): The first 8 LWfG arrived in Oct.1. and the maximum 62 was counted on Oct 25. Towards the end of October, the LWfG started to move south and the last autumn 28 birds were seen on Nov. 11. In mid-winter the area is esentially void of LWfG, (2 in Feb.), and only in March numbers rise with the onset of preliminary spring migration 11 ind. on Mar. 13 and a maximum of 19 ind on Mar. 19.

The Central area: (Petten) In autumn, it looked like Petten seemed to have lost in importance for the LWfG. Only 2 observations, 2 ind on Nov 27 and 5 ind on Dec 12. And that was all a false idea! On Jan 17 LWfG were staying in the polder behind Putten (Here, a special protection area is going to be established for the LWfG), and the flock was growing until it reached 32 on Feb 4! Here, the birds were easy to observe and a lot of (known) rings could be read. (**Among them Finny!**). The last remarkable number here was 15 ind on Mar 14.

Southern sites (Oude Land van Strijen ja Korendijkse Slikken/Westerse Laagjes) By the endof October, the LWfG were moving south, and aimmediately on Nov. 1. twenty were seen in Het Oude Land van Strijen. On Nov 7 the number had risen to 33 exx . (At Anjum still 28 exx were local on 11 November). These 33 were about to be come the maximum, until "suudenly" on Dec 30 a total of 51 birds were counted! since the general opinion (based on ring readings) is, that there is no exchange of

birds between Het Oude land and Korendijk, where at this time a maximum of 19 exx were sitting (see Korendijk). Is fo, then in mid winter **70 LWfG were staying in SW Netherlands!** Because of the migration of LWfG in direction Petten (see there) and Hardinxveld-Giessendam the progress of the numbers at Strijen is difficult to determine (and this is an understatement!) In any case there were 36 birds present on Jan 2. One week later still 34 amd then less again. Feb 23 no more than 24 were staying in the polder at Oude Land.

At Korendijkse Slikken / Westerse Laagjes appear 4 LWfG on 28 Nov, and their number rose to 19 exx on Dec 19. At the time of 51 birds in het Oude Land (30 december) 17 - 18 exx were sitting at Korendijk. The only LWfG at the Westerse Laagjes (on 12 december) got a lot of publicitysince it was the first observation of a Finnish one! (therefore named Finni!). On 29 Finni had also been seen at Den Bommel! (Cor van Aart saw Finny as first in The Netherlands, about two weeks before GH) Later in winter Finni was also seen at Walcheren ..... The general picture at Korendijk stayed unchangend in mid winter: during the whole period, 19 birds were present. On Mar 5 their number had fallen to 9 , but after the sudden "cow-invasion" in the beginning of March, their number jumped to 17 on Mar 1.

Observations and Ideas from Kazakhstan

S.N. Yerokhov, O.V.Beljalov, V.I.Ivonenko

In 2004 we again counted LWfG in North-Western Kazakhstan Kustanai region for the Friends Association. In Kustanai Oblast there are some of the most important autumn staging areas for West Eurasian LWfG. Famous is lake Kulykol. We have done these counts since 1997. The year 2004 was very special. The geese did not stay very long at the lakes. This behavior was probably caused by various separate changes in the environmental conditions, in particualr the drought increasing the salinity of the water of Lake Kuluykol. The percentage of LWfG in all geese was abnormally low: only 1.5. Previous numbers have varied between 2.7 and 3.3 per cent . Apparently, the Lesser White-fronted geese are most sensitive towards the changing environment at the stopover sites, specifically towards the shrinkage and salinization of the lakes. Behind this link You will find our full report in English.

Autumn LWFG monitoring on the Kostanay Region we are have done on the period of 27 September - 12 October. It was a very unusual migrating season. We controlled 13 key sites for the geese roosting and feeding, but not more than 30 thousands geese were registered, including up to 700 LWfG and 5000 Red-Brested Geese. The number of LWfG was one third of last year's and only 9 per cent of the number in 2002. The differences are mainly caused by changes in the migration pattern. The ecological situation on the lakes of the Northern part of Kostanay region (Kamushovoe-Zhaman, Zhaksu-Zharkol, Khak) and on the Eastern part (Tuntugur-Zhansura and Koybagar lakes) was favourable - enough water and a moderate hunting influence (except at lake Tuntugur). But the big goose concentrations were not there. Local inspectors (I know them since many years already) informed us that they had registered two migration waves already on the usual datas: 10-15 September (first, not very numerous) and 18-22 September (very numerous: Koybagar Lake - 100 000, Kulykol Lake - 300 000, up to 8 000 LWFG including). But on no lake did the geese stay a long time - after the 2-3 days roosting they left the lakes. What is a main reason for this? I think, for every key site there was a separate negative factor, probably. For the Kulykol lake - not enough water and a very high salt level. There was a big open water site on the south part of this lake on the last year. This area was dry this year. After a hot dry summer, agricultural areas were plouyuhged ïn the first September days already. Early in October there was snow.

Of 17 geese shot September 24-25 at lake Biyesoigan, six were LWfG. What makes this alarming is that the hunters were later auxiliary staff iof our expedition. So You see, not even hunters with interest in biology are awrew of the fact that the LWfG is a procteced species in Kazakhstan, too. No information campaign seems to be effective enough.

Before the expedition starting, I got information about the satellite marked LWFG control from the Karakamush (Kundyktu) lake area - 22 September signal, (about 40 km. from the Kulykol lake to the South-West). We visited this lake on the 8 October, but there were about two thousands geese only (AnAn and AnAlb) controlled there. It is a saltish lake with big reedbeds.

On the additional, we visited on the 9-12 October a group of the lakes on the far South part of Kostanay Region, my first visit of this area. It is a very important, key site for migrating geese (About 220 000 we controlled) but mainly for the AnAnser and AnAlbifrons. 6 LWFG only. These lakes (Zharkol, Sybyndykol, Taldykol and some other) probably support another geese flyway, I think - from the Yirtysh River (Northern-East Kazakhstan) and the Tengyz-Kurgaldjin lakes system. And this our visit was very impotant for the comparison and future analyzis.

However, the results of this Autumn LWFG monitoring are interesting. The age structure of the separate flocks showed that young birds were predominate, 65-70%. And more often than in previous seasons we observed LWFG on the Northern part (Zhaksy-Zharkol), where the water situatuon was good.

Project Participants:

- S.N. Yerokhov, Project Co-ordinator, ornithologist,
- O.V.Beljalov, Ornithologist/Researcher
- V.I.Ivonenko, Driver/Assistant

Breeding and Re-introduction

Reintroduction of the Finnish Lesser White Fronted Goose*

Antti Haapanen

**) Presentation at the Lammi meeting 1.4.05*

The Friends of the Lesser White fronted Goose association

The association is a non governmental organization. The main aim of its activities is to reintroduce the Lesser White fronted Goose (LWfG) back as a breeding bird in Northern Finnish Lapland. For this end the association maintains a captive population in Hämeenkoski, southern Finland. The captive population is possibly the largest one in the world and so a very important complement to the Swedish one. The association maintains close contacts with their Swedish counterpart projekt Fjällgås run by the Swedish Hunters Central Association.

The association do not believe that it is possible in the near future to eliminate the reasons causing the global decline of LWfG, in particular the extinction from Sweden and Finland. Therefore, it believes that also in Finland a population migrating for wintering to Western Europe should be established like in Sweden. Naturally, the association tries to make all in its hands that the hunting pressure will be lowered, if possible, in the old staging and wintering areas of the tiny population still breeding in Northern Fennoscandia.

The recent Finnish preservation discussion

Here in Finland, we know the well documented fact that the LWfG population has been decreasing already during the last one hundred years. Once very viable, the population has almost totally disappeared from this part of the globe. Ten years ago LWfG have nested in this country for the last time. And the numbers of migrating birds are becoming close to zero. In spring 2004 only six birds

were seen and this spring 2005 eight birds. In spite of these well known facts very little, too little, has been done for the enhancement of the situation.

Quite much attention has been put to the studies whether this Fennoscandian population is an isolated one and of special nature. I refer in this context especially to the study by Minna Ruokonen and others 2004 in the Journal of Conservation Genetics. The study as such is apparently well done and I agree that there exists the female carried mitochondrional DNA of these geese which really seems to be to some degree different from those in birds from North Russia. This is not surprising, as female geese show strong site fidelity. But I do not agree with the final conclusions of the study that the original Fennoscandian population of the Lesser White Fronted Goose would be a separate isolated population. In this study by Ruokonen and others and in several earlier contexts it has been shown that these Fennoscandian geese migrate south east to places where they meet North Russian geese. At these wintering places the exchange of males from different regions does take place and it has always taken place. As Ruokonen and others have shown in 2004 the nuclear DNA (more than 99 % of the total DNA) on the population level do not differ in these two populations from North Russia and Fennoscandia. So the Fennoscandian birds do not represent an isolated population and they should not be regarded as a separate management unit although Ruokonen and others 2004 try to stress that it should be the case.

In October 15, 2003, three wildlife ecologists, Dr. Ilkka Koivisto, the former director of Helsinki Zoo, Dr. Martti Soikkeli, a former zoology professor of Turku University and the first man paying special attention to the decrease of LWfG population already in 1973, the third neing myself, wrote a letter to the Finnish Ministry of Environment. In this letter we were concerned on the passive role of the Ministry. We gave all the merits to Finnish WWF and their Norwegian partner on their studies on the population, migration, wintering grounds etc. We, however, do not trust that the Fennoscandian population can be saved by the present measures. Apparently the over hunting and destruction of resting and wintering grounds are the main factors that have caused the decline of the population. These factors cannot be removed overnight. The Fennoscandian population do not have time to await better days.

We proposed in our letter that the Ministry shall continue its support to the studies of WWF Lesser White-Fronted Goose group. But at the same time it should take supportive action for the reintroduction of the Lesser White Fronted Goose as a breeding bird in Finland.

After the delay of seven months we got the answer. In that answer the Finnish Ministry claimed that the Lesser White-Fronted Goose population which has been raised in cages has been infected by alien genes and this captive population cannot be cleaned.

According to the Finnish Nature Conservation Act, alien species, subspecies nor alien population must not be released in nature to reproduce there. In addition the Ministry stated that there is a strong opposition in Finland against artificial reintroduction of the species. But finally the Ministry expressed a strong need for a special seminar with wide participation in the field of Lesser White Fronted Goose preservation.

I agree that this meeting is needed. However, I do not agree with our Ministry of Environment on their nature conservation policy at this point.

Our studies done by Marina Kholodova on the captive population in Hämeenkoski run by our society the Friends of the Lesser White Fronted Goose have revealed that some birds carry alien genes of the Greater White Fronted Goose. A high proportion of them are, however, identical to the free living birds. We are ready to continue our genetic studies. So I do not understand what the Ministry means when they stated that the captive population cannot be cleaned. I have already stated that the Fennoscandian population cannot be regarded as a separate management unit. It is carrying the same nuclear DNA as the North Russian population. To conclude I do not agree with the Ministry on the interpretation of our Nature Conservation Act.

I hope our Ministry of Environment would enhance its credits in the conservation of the Lesser White fronted Goose. I don't think that the Ministry has fulfilled its duties on the implementation of the Bern, Bonn and Rio conventions, African Eurasian Waterbird Agreement nor the EU Birds Directive.

Conclusions

The Friends of the Lesser White fronted Goose think that the present conservation status of the species

need immediate action, not just studies. The Friends of the Lesser White fronted Goose are very much in favour of reintroduction projects. We continue to maintain and to enhance our readiness to enter to an active reintroduction process. Already in summer 2004 we have made a successful release experiment using the so called Barnacle Goose method. In winter one of the released LWfG was observed in the Netherlands. The association is enhancing its capacity to continue in this at a suitable moment.

As this project is totally in the hands of the private association it is trying find co operators and financial sponsors to this project.

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Should we start LWfG breeding from scratch?

Pentti Alho

The following thoughts have ripened during two decades of experience in breeding Lesser White-fronted Geese in Finland. Before re-starting a projext like this "from scratch" one should be aware of the following points.

1. Buildings

Reproducing pairs need the following facilities:

#. round-the-year rest areas/grazing pastures
#. roofed halls for winter
#. one well-equipped breeding cage for each pair
#. breeding facilities for goslings (including incubators etc)

Non-reproducing, like immature birds, widows etc. need pastures and halls also. Separating the flock often is advantageous. Every partial flock of course needs similar facilities. Building up facilities like the ones in Hämeenkoski would cost at least 200 000 EUR. (I would not recommend to sell for that price.)

Renewing one breeding cage takes one week's work plus material for EUR 1000 although the original piping is all right.

2. Parent birds?

Wild LWfG are essentially impossible to find. One may dream of up to 10 individuals a year, at a price! A few samples would not be of much use, since a founding population should encompass some 100 individuals. Should we prefer Chinese wild birds to current captive stock if no other are available?

Captive birds have to be paid with money, too. In Europe one may pay 200 to 300 euros for one pair depending on whether they are immatures or adults. But demand is higher than supply, so prices will skyrocket when we really try to buy many. Also, somebody must pay for the veterinary and genetic tests of such birds. More than one hundred parent birds must be aquired, since the risk for inbreeding is evident. Many breeding sites must be trawled through, since no farm will house more than a few pairs not to speak of ancestral lines. If juvenile birds are bought, we must wait for two or three years for the first breeding attempt, hoping that some of them will accept each other at partners. In practise, we must be prepared for a pair forming percentage below 50. Newly bought adult pairs generally also are too young to reproduce in the first year, older pairs are scarce. Also some LWfG die. With a ten per cent mortality almost 2 pairs of ten are destroyed every year. LWfG widows will not form new pairs easily. All methods are cumbersome, slow, and risky.

In a farm population with varied age (1-cy, 2-cy , 3-cy. and older) the successfully breeding birds may often form less than two thirds of the stock.

3. Fodder

At Hämeenkoski the annual consumption of goose fodder is calculated in metric tons. half of the most important industrial fodder are expensive imported goods. Half a ton dried shrimp is feeded to the geese

during reproduction every year the basic fodder consisting of a few tons of domestic grains. In winter, supply of green fodder is easily insufficient. For this we can partially substitute industrially produced vitamins and micronutrients, another expensive import.

4. Multiplication

Best results are achieved by natural nesting in isolated breeding compartments for each pair. The natural mother is the best nurse and easiest to take care of. Under all circumstances some proportion of the eggs must be hatched in incubators and later the goslings must be taken care of manually in suitable rooms. These facilities must exist.

A productive farm population must be strong enough to reproduce itself and to produce enough surplus goslings for release, which is the ultimate reason for breeding LWfG at all. This means at least population of about 300 birds; the same figure also corresponds to the population size recommended for maintaining genetic diversity. With the observed mortality and fertility in captvity it would take 17 years to build up such a population, if we were lucky enough to annually find 10 fresh parent birds from outside. In Finnish Lapland conditions probably are less favourable for restocking LWfG than in Sweden. Therefore we should expect more parent birds to be needed than is estimated above and building up a viable population will probably take even more years. All in all the project time from scratch to completion must be estimated to be somewhere around 30 years, two thirds of the time being needed for building up the captive population to the size we have today.

5. Foster parents

Finding foster parents is not self-evident either, but some kind of foster parents are a must for a successful reintroduction. Lesser White-fronts with migration experience exist in Sweden, but using any of them must be judged impossible. Only two other alternatives remain today: Barnacle Geese and ultralight aircraft. Aquiring one pair of Barnacle Goose foster parents requires several absolutely well timed and successful vists to their nest. Also, the Lesser White-fronted Geese and the Foster parent geese must breed simultaneuosly, which may fail also.

6. During nesting time

If breeding has been successful and the geese begin to nest, much surplus work has to be done. It takes days and weeks to separate the productive pais into their breeding compartments. Forcing them in is out of the question, if we want them to breed successfully, or even survive. Lesser White-fronted Geese are extremely sensitive in their nesting time.

7. Release

After all toil, taking samples for the gene tests, ring marking and, if thigs go well, tagging and releasing together with monitoring are counted as pure pleasure and we don't calculate any cost for these activites encomapssing a few thousand kilometers of driving, renting buildings on the spot etc. I just like to remind the reader that ourt society has paid 3000 euros for our earlier ARGOS satellite program with two transmitters. Calculating the costs one should also bear in mind that a project with ultralight aircraft would bring enormous goodwill to Nature Conservation and probably be very attractive for sponsors. Sponsor funds would be needed, since experts estimate the total expenses of such a project to range somewhere around one million euros for one hundred goslings, 10 000 euros each.

International agreements guiding the protection of the LWfG

Antti Haapanen (in Finnish)

Suomi on liittynyt useisiin kansainvälisiin sopimuksiin, jotka velvoittavat Suomen valtiota suojelemaan luonnon monimuotoisuutta ja etenkin uhanalaisia muuttavia lajeja. Tällaisia sopimuksia ovat ainakin:

- Yleissopimus Euroopan luonnonvaraisen kasviston ja eläimistön sekä niiden elinympäristön suojelusta (lyhyesti Euroopan luonnonsuojelusopimus eli **Bernin sopimus, Convention on the Conservation**

of European Wildlife and Natural Habitats);
- Biologista monimuotoisuutta koskeva yleissopimus (lyhyesti **biodiversiteettisopimus**, Convention on Biological Diversity);
- Muuttavien luonnonvaraisten eläinten suojelua koskeva yleissopimus eli **Bonnin sopimus, Convention of the Conservation of Migratory Species of Wild Animals);**
- Bonnin sopimuksen puitteissa solmittu erityissopimus Afrikan-Euraasian vesilintusopimus **(African-Eurasian Waterbird Agreement, AEWA)**.

Suomen liittyessä EU:hun valtio sitoutui myös **luonto-** ja **lintu**direktiivien tavoitteiden täyttämiseen. Kaikille näille sopimuksille ja direktiiveille on yhteistä, että ne velvoittavat säilyttämään luonnonvaraisten lajien suotuisan suojelutason. Sanamuodot saattavat tosin hiukan vaihdella.

Näiden sopimusten ja direktiivien velvoittamana suotuisan suojelutason säilyttämisen vaatimus on otettu myös Suomen luonnonsuojelulakiin. Luonnonsuojelulain 5 §:n 3 momentti määrittelee suotuisan suojelutason. Se on suotuisa, kun laji pystyy pitkällä aikavälillä säilymään elinvoimaisena luontaisessa elinympäristössään. Jos suojelutaso ei ole suotuisa, sen saavuttamiseen on pyrittävä (saman pykälän 1. momentti).

Kansainväliset velvoitteet edellyttävät valtioita ryhtymään toimiin varsinkin uhanalaisten muuttavien lajien suojelemiseksi. **Vesilintusopimus toteaa III artiklassaan**, että osapuolten eli sopimuksessa mukana olevien valtioiden tulee yhteistoimin kehittää sellaisia hankkeita, joilla suojelua voidaan tehostaa. **Biodiversiteettisopimuksen 9. artikla** velvoittaa ylläpitämään lajien kantaa tarhaolosuhteissa. Tämä on ajankohtaista luonnonkannan hävittyä tai ollessa akuutisti uhanalainen.

Kiljuhanhi on juuri sellainen laji, johon tulisi soveltaa edellä mainittuja periaatteita.

Suomessa näiden sopimusten velvoitteista, yhteydenpidosta ja kansallisista toimista vastaa ympäristöministeriö. Käsitykseni mukaan Suomessa viranomaisilla ei ole juurikaan näyttöjä kiljuhanhen suotuisan suojelutason, etenkään kiljuhanhitarhan ylläpitämisestä tai lajin palauttamisesta Suomen luontoon, vaikka tämänsuuntaisia aloitteita on tehty.

Käyttämällä sopimusten englanninkielisiä nimiä WWW:stä löytyy sopimusten tekstit kokonaisuudessaan ja muuta tietoa niiden soveltamisesta.

The Society

Our annual meeting 24.4. in Hämeenkoski

Antti Haapanen is our new Chairman

- Membersip fee 2005 is 40 euro
- **Our new Chairman** is Phd Antti Haapanen from Helsinki, and the other board members are MSc. erkki jaanu from Valkeakoski and PhD. Lauri Kahanpää from Jyväskylä and , vice members Jyrki Patomäkifrom Heinola and MSc.. Antti Ripatti from Helsinki.
- The statutes of the Society were altered: In the next meeting 5 board members will be elected. .
- Next meeting in autumn 2005.

Report 2004 (6:th activity year)

1) Construction at the farm 2004:

- A rat-proof food storage house for fodder (65 m^2) was built.
- 3 more old brooding boxes were modernized to the standard of the new, which are winter-enduring. Only 3 are still in bad shape.
- At last, a new net covering the whole farm arrived from Russia. This net is large and expensive (total 5000 euros).
- Annual maintenance of the facilities and taking care of the birds, color ringing goslings etc. was done.

2) LWfG maintenance and research

Of 25 hathclings 21 survived in October. 110 adult birds. 4 immatures released in Lapland. Mortality on farm 14 individuals -an all time low.

Updating the pedigree book is continued. New gene tests have not been carried out while waiting for international consensus on methods. Enhancing the captive stock with natural birds has failed.

3) Experimental release

The tagged Barnacle goose from 2003 seemingly died by predation.

The experimental release plan was presented to the international community at the Edinburgh conference. in spring 2004. The first 4 LWfG goslings were imprinted on Barnacle Geese and released in Enontekiö, Lapland in 2004. No formal permit need / could be sought for. According to Finnish law it is sufficient thet the released birds represent a domestic species/subspecies/form. We also follow IUCN guidelines on reintroduction/restocking.

The transmitter went silent again. One juvenile LWfG was later observed in the Netherlands. This proves: Lambart von Essen's method works in Finland also.

5) PR

TV- radio, the press and our own bulletin. Talks at conferences.

6) International cooperation

- Sweden's Projekt Fjällgås
- LIFE-plan in cooperation with Aktion Zwerggans
- Observations abroad:
  - Monitoring expedition to Kargopol oblast.
  - Vladimir Morozov tagged some LWfG in the Polar Urals and revealed facts about migration routes - and unfortunately also mortality.
  - Bertus de Lange and our own team made observations in the Netherlands
  - Jamshid Mansoori in Iran. The Society provided him with a telescope.
  - Sergei Yerokhov continued his series of observations in Kazakhstan.
- Conferences:
  - Wetlands International meeting in Odessa (Elected Ivan Rusev, Åke Andersson and Maire Toming.)
  - Edinburgh Conference.

7) Finances

In balance. Also, we own a good farm.

Planning for 2005 (7:th activity year)

Future tasks :

- Construction continues
- Lammi Conference
- LifeNature-projectplanning
- Pedigree book computerized.
- Reintroduction start
- Bulletin
- BirdLife membership?
- National Action Plan for Finland and Sweden
- International Action Plan for EU
- Kargopol expedition.
- Monitoring in Iranissa.
- Protection enhancement in russia, Kazakhstanissa, Iranissa, Ukrainassa and China
- RGG:Conference
- Wetlands International GOOSE conference

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Raatikuva Ky Heikki Löflund

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- bird breeder: Pentti Alho (Preferrably, speak German)
  - tel/fax 358-3 7654 727, mobile 358-440-654727 or 358-50-3441755.
- home page http://www.ansererythropus.tk/
- foreign membership: USD 50 or EUR 50 per annum
  - Please instruct your bank to forward payment orders **from Europe** through:
    - Nordea Bank Finland Plc. Helsinki, Finland (Formerly Merita Bank Plc)
      - SWIFT-address: NDEAFIHH.
      - IBAN account: FI6210323000513444
      - Beneficiary:
        - Kiljuhanhen Ystävät ry
          - PO-Box 517
          - FI-13100 HÄMEENLINNA
  - Please instruct your bank to forward payment orders **from USA** through:
    - JP Morgan Chase Bank NA, New York, N.Y, USA
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