



AEWA LESSER WHITE-FRONTED GOOSE INTERNATIONAL WORKING GROUP



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12-14 April - Trondheim, Norway

Revision of the AEWA International Single Species Action Plan for the Lesser White-fronted Goose (Western Palearctic)

Introduction

The AEWA International Single Species Action Plan for the Conservation of the Lesser White-fronted Goose (Western Palearctic populations) was adopted at the 4th Meeting of the AEWA Parties in 2008. A revision of the Action Plan was envisaged to be undertaken five years after its adoption, i.e. in 2013, or sooner in case of an unforeseen emergency situation.

The inter-governmental AEWA Lesser White-fronted Goose International Working Group was convened by the AEWA Secretariat in 2009. One of the core tasks of the AEWA Species Working Groups as outlined in the Terms of Reference developed by the AEWA Technical Committee, is to facilitate the revision of their respective Action Plans.

A revision of the AEWA Lesser White-fronted Goose Action Plan is advisable, as the action framework in particular no longer reflects current available knowledge and priorities for implementation.

Overview of the revision process

The process to revise the AEWA International Action Plan for the Lesser White-fronted Goose was launched during the 2nd Meeting of the AEWA Lesser White-fronted Goose International Working Group at Lake Kerkini, Greece in November 2012 with the aim to submit the revised Action Plan to the 9th Meeting of the AEWA Standing Committee in September 2013 for preliminary approval, subject to final adoption at the 6th Session of the Meeting of the AEWA Parties in 2015. A new threat analysis as well as action framework were developed at the meeting by the range states present.

In addition, the Working Group requested the inclusion of the Eastern main population in the revised Plan, if feasible, recognizing that the population in question occurs outside of the geographical boundaries of AEWA. As such, widening the scope of the Action Plan to include the Eastern main population would have to be conducted also under the framework of the Convention on Migratory Species (CMS) and any future Plan would be a joint one under AEWA and CMS.

A 5th Meeting of the Committee on Reintroduction, Supplementation and Captive Breeding of Lesser White-fronted Geese in Fennoscandia (RECAP Committee) was also convened in Bonn, Germany on the 12th of February 2013, in an attempt to negotiate final outstanding points between the Nordic range states. Negotiations continued via correspondence throughout the summer of 2013, but a consensus could not be reached in time for submission of the revised Action Plan to the 9th Meeting of the AEWA Standing Committee.

During 2014 Norway and Sweden undertook steps to reach a bilateral agreement on remaining open issues within the Action Plan. As a result a compromise draft was submitted to the 12th Meeting of the AEWA Technical Committee for review in March 2015. The Technical Committee provided comments on the draft, highlighting in particular that several actions included in the compromise were unclear and left much room for interpretation. Norway and Sweden were requested to review the TC comments and proposals for changes and to indicate



The 3rd Meeting of the AEWA Lesser White-fronted Goose International Working Group is being hosted by the Norwegian Environment Agency with additional funding provided by the EU LIFE+ project "Safeguarding the Lesser White-fronted Goose along its European Flyway" [LIFE10 NAT/GR/000638].

to the Secretariat which ones would be acceptable. Some contentious points remained unresolved, but based on the positions communicated by Norway and Sweden the Secretariat submitted a revised draft for consultation with the International Working Group in June 2015 followed by a formal range state consultation in July and August 2015. The draft no longer foresaw any actions to be implemented for the so-called Swedish population, following from which it was excluded from the scope of the Plan.

During the formal range state consultation, widely contrasting positions were once again expressed by some of the range states. In light of the approaching deadline for the submission of documents to the 6th Meeting of the AEWA Parties in November 2015, the AEWA Standing Committee took the decision to halt the revision process and to withdraw the document from the MOP6 agenda. The Standing Committee also reconfirmed that until a revised version is adopted by the Meeting of the Parties, the 2008 Action Plan remains valid and open for implementation. The Standing Committee requested the range states to the species to resume the revision process during the upcoming triennium.

Next steps

The following options outline possible ways forward with regard to the revision of the Action Plan:

- A final one-off attempt (subject to a tight deadline) is made to have all populations of Lesser White-fronted 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;
- The scope of the Action Plan includes only the AEWA-listed populations, which are already targeted and prioritized for conservation action under the current Action Plan (Fennoscandian and Western main populations) as well as the Eastern main population;
- No revision is undertaken at this time and the 2008 Action Plan remains valid for implementation.

If a decision is taken to proceed with the revision of the Action Plan, the Secretariat will provide range states with an updated version for consultation with the aim to submit the revised draft for preliminary adoption by the AEWA Standing Committee at its next meeting expected to take place in late 2016/early 2017. Final adoption of the Plan would take place at the next Meeting of the AEWA Parties in 2018.

The July 2015 consultation draft is attached to this cover note for ease of reference. None of the changes proposed by range states during the last formal consultation round have been taken into account at this time. Non-controversial corrections and comments submitted previously will of course be included if a decision is taken to continue with the review process.

Action requested from the Working Group:

The Working Group is requested to discuss the issue and to take a decision regarding next steps with regard to the revision of the Action Plan.

Agreement on the Conservation of
African-Eurasian Migratory Waterbirds (AEWA)

DRAFT International Single Species Action Plan for the
Conservation of the Lesser White-fronted Goose
in the Western Palearctic region

Anser erythropus

AEWA Technical Series No. [...]

November 2015 (1. Revision)

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Milestones in the Production of the Plan

- 2nd Meeting of the AEWA Lesser White-fronted Goose International Working Group, 9-11 November 2012, Lake Kerkin, Greece
- 5th Meeting of the Committee for Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia, 12 February 2013, Bonn, Germany
- First draft: presented to range states in July 2013
- Second draft presented to range states in April 2014
- Third draft presented to the AEWA Technical Committee in March 2015
- Fourth draft presented to the AEWA Standing Committee in July 2015
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Geographical Scope

This International Single Species Action Plan requires implementation in the following countries regularly supporting Lesser White-fronted Geese within the Western Palearctic region: Azerbaijan, Bulgaria, Estonia, Finland, Germany, Greece, Hungary, Iraq, Islamic Republic of Iran, Kazakhstan, Lithuania, Norway, Poland, Romania, Russian Federation, Syrian Arab Republic, Turkey, Turkmenistan, Ukraine and Uzbekistan.

Reviews

This International Single Species Action Plan supersedes the Action Plan adopted by the 4th Meeting of the AEWA Parties in 2008 and should be revised again in 2025. An emergency review shall be undertaken if there are sudden major changes liable to affect the Western Palearctic Population.

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Picture on the cover: [...]

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Preface

The first AEWA International Single Species Action Plan for the Conservation of the Lesser White-fronted Goose was approved by the 4th Session of the Meeting of the Parties to AEWA in 2008. A revision of this ISSAP led by Ms. Nina Mikander (UNEP/AEWA Secretariat) commenced at the 2nd Meeting of the AEWA Lesser White-fronted Goose International Working Group in November 2012 at Lake Kerkini, Greece and was continued at the 5th Meeting of the Committee on Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia in February 2013 in Bonn, Germany. The resulting draft was circulated to the range states in July 2013. A further preliminary draft was circulated to the AEWA Technical Committee for guidance in March 2015. [The final draft is expected to be endorsed by the AEWA Standing Committee xxx and approved by the 6th Session of the Meeting of the Parties to AEWA in November 2015.]

This revised Action Plan is based on the AEWA Single Species Action Plan for the Conservation of the Lesser White-fronted Goose (Western Palearctic Population) adopted by the 4th Meeting of the AEWA Parties in 2008, which remains an invaluable source of published information on the species:

Jones, T., Martin, K. Barov, B., Nagy, S. (Compilers). 2008. International Single Species Action Plan for the Conservation of the Lesser White-fronted Goose *Anser erythropus*. AEWA Technical Series No. 36. Bonn, Germany.

0 - Executive Summary

The Lesser White-fronted Goose is globally threatened, being recognized as Vulnerable by the IUCN and ranked by BirdLife International as ‘SPEC 1’ within Europe, denoting a European species of global conservation concern. The species is classified as Endangered in Europe and Critically Endangered within the European Union according to the 2015 European Red List Assessment. It is listed in Annex 1 of the European Council Directive on the conservation of Wild Birds (79/409/EEC 1979, 2009/147/EC 2009), in Column A of the Action Plan under the African-Eurasian Migratory Waterbird Agreement (AEWA) and in Annex II ‘Strictly protected species’ of the Bern Convention.

Lesser White-fronted Geese are long-distance Palearctic migrants, currently breeding discontinuously in the sub-arctic zone from northern Fennoscandia to eastern Siberia. The wintering/staging areas and migration routes are only partially known. The global population of the species has declined rapidly since the middle of the 20th century. Although the most dramatic decline appears to have levelled off, there are still fears that the species may go extinct following the fragmentation of its range and the continued threat posed mainly by illegal hunting and habitat loss.

Four populations can be identified, three of which constitute components of the species traditional flyways:

- **Fennoscandian population (F)**/breeding in Norway, Finland and the Kola Peninsula of north-westernmost Russia);
- **Western main population (WM)**/breeding in northern Russia to the west of the Taimyr Peninsula);
- **Eastern main population (EM)**/breeding from the Taimyr Peninsula eastwards and wintering in China and Japan);
- **Swedish population (S)**/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).

Of these four, the Fennoscandian and Western main populations are covered by this Action Plan.

Lesser White-fronted Geese occur regularly in at least 22 countries within the AEWA Agreement Area. Of these the following 20 are referred to as ‘Principal Range States’ in the Action Plan and have the major responsibility for its implementation:

Azerbaijan (WM)
Bulgaria (F, WM)
Estonia (F)
Finland (F)
Germany (F, WM)
Greece (F)
Hungary (F, WM)
Iraq (WM)
Islamic Republic of Iran
(WM)
Kazakhstan (F, WM)

Lithuania (F)
Norway (F)
Poland (F, WM)
Romania (WM)
Russian Federation (F, WM, EM)
Syrian Arab Republic (WM)
Turkey (F, WM)
Turkmenistan (WM)
Ukraine (WM, F)
Uzbekistan (WM)

This plan identifies the key threats to the species as well as the key actions required to improve the conservation status of the Lesser White-fronted Goose across its range in these 20 range states.

The long-term **GOAL** of this Action Plan is to **restore the Lesser White-fronted Goose to a favourable conservation status** within the AEWA Agreement area.

The **PURPOSE** is to **increase the size of these populations and to stop the species' range contraction** within the ten-year lifespan of the plan. The **OBJECTIVES** of the plan are therefore to increase survival rates, prevent further habitat loss, maximise reproductive success, to maintain genetic integrity and native flyways as well as to close key gaps in knowledge.

To meet these objectives **RESULTS** and corresponding **ACTIONS** (to be achieved by 2025) are set out in the plan.

This plan covers the period 2015 to 2025. A revision should be undertaken in 2026. However, an emergency review can be undertaken prior to 2025 if there are any sudden major changes liable to affect the Western Palearctic populations.

The implementation of the plan will be coordinated and reviewed by the AEWA Lesser White-fronted Goose International Working Group which is open to all range states.

1 - Biological Assessment

The Lesser White-fronted Goose *Anser erythropus* is the smallest of the geese in the genus *Anser*. The species is globally threatened, being recognised as Vulnerable by IUCN. It is classified as Endangered in Europe and as Critically Endangered within the European Union in the 2015 European Red List Assessment. Lesser White-fronted Geese are long-distance Palearctic migrants, currently breeding discontinuously in the sub-arctic zone from northern Fennoscandia to eastern Siberia. The wintering/staging areas and migration routes are only partially known.

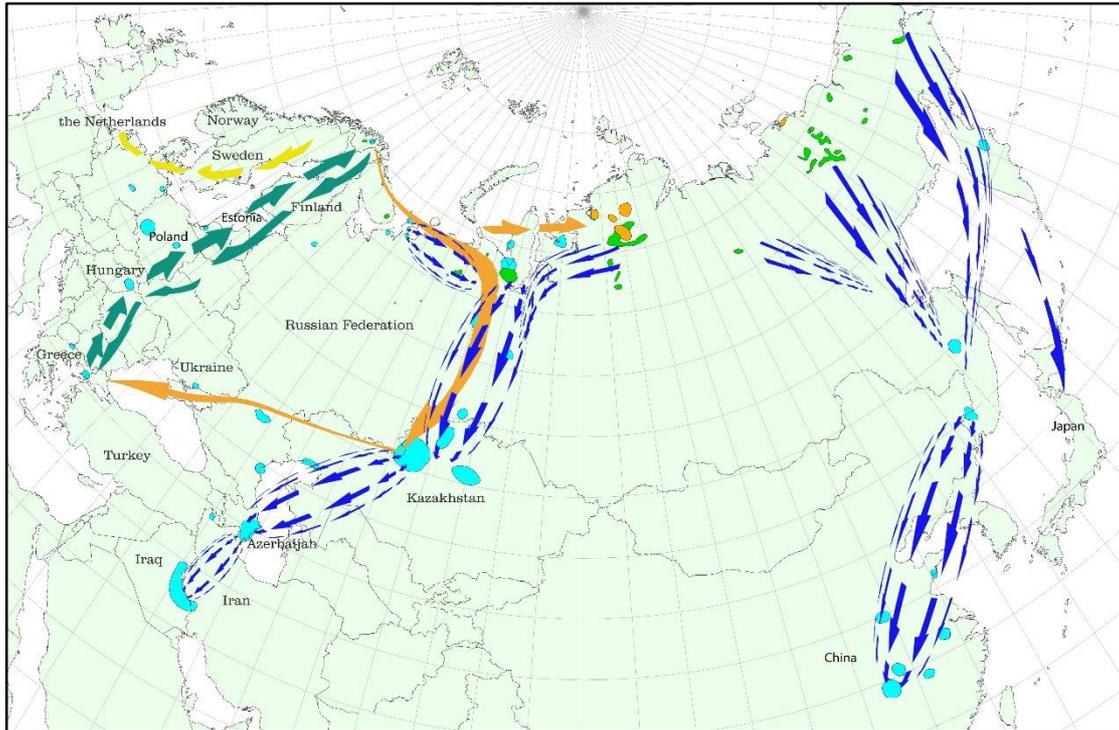


Figure 1. Global distribution of the Lesser White-fronted Goose populations. Major flyways for the populations are depicted with arrows (dark green: Fennoscandian route of successful breeders, orange: Fennoscandian moult migration, blue: Western main and Eastern main populations, yellow: Swedish reinforced population) Breeding areas in light green, staging and wintering areas in light blue and moulting sites in orange. © BirdLife Norway.

1.1. Taxonomy

Phylum: Chordata

Class: Aves

Order: Anseriformes

Family: Anatidae

Tribe: Anserini (Vigors, 1825)

Species: *Anser erythropus* (Linnaeus 1758)

Synonym: *Anas erythropus* (additional synonyms may be found at <http://www.worldbirdinfo.net/> and <http://piskulka.net>)

No subspecies are recognised (IOC World Bird List: www.worldbirdnames.org, cf. Ruokonen et al. 2004).

Four populations can be identified, three of which constitute components of the species traditional flyways:

- Fennoscandian population (breeding in Norway, Finland and on the Kola Peninsula of north-westernmost Russia);
- Western main population (breeding in northern Russia to the west of the Taimyr Peninsula) and;
- Eastern main population (breeding from the Taimyr Peninsula eastwards and wintering in China and Japan):
- Swedish population (S/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).

Of these four, the Fennoscandian and Western main populations are covered by this Action Plan.

1.2. Population Development

1.2.1. Global population trend and estimate

The global population of the Lesser White-fronted Goose has declined rapidly since the middle of the 20th century. National reports submitted by the range states to the AEWA Lesser White-fronted Goose International Working Group in November 2012 as well as reports from China for the Eastern main population (Wang et al. 2012) indicate that the global population decline appears to have levelled off, although the overall population trend is still negative and recent changes in China could lead to a larger decrease (Tomas Aarvak pers. comm.). The fragmentation of the species' range coupled with the continued prevalence of manifold threats and uncertainties concerning the actual status of the species also indicate that the population remains far from stable and may yet go extinct.

The estimate of the global mid-winter population is 28,000 to 33,000 individuals, derived from combining estimates for the Fennoscandian and Western main populations estimated at a total of 8,000 to 13,000 individuals, and the Eastern main population estimated at 20,000 individuals (Delany et al. 2008, Delany & Scott 2006, Wang et al. 2012).

1.2.2. Western main population – trend and estimate

The most recent population estimate for the breeding population in the European tundra is 500 to 800 birds. Decreasing numbers and a contracting distribution have been noted within study areas in this region, even though no significant changes/impacts have been observed on the breeding grounds (Morozov & Syroechkovskiy 2002). However there is a fundamental lack of baseline information where estimates from the breeding grounds do not match population estimates during migration and from the wintering grounds; for example, Syroechkovskiy et al. (2005) underline the fact that the breeding grounds of some 8,000 birds of the population have yet to be located.

1.2.3. Fennoscandian population – trend and estimate

The Fennoscandian population breeding in Norway and Finland (i.e. excluding the unknown number of birds nesting in the Kola Peninsula of westernmost Russia – see below) is currently estimated to number 20-25 breeding pairs (Øien & Aarvak (BirdLife Norway) pers. comm.). Following a long-term decline, from an estimated 10,000

individuals in the early 20th century the population currently seems stable or even slightly increasing. In 2008 a culling program of Red Fox *Vulpes vulpes* was started in the core breeding area in order to avoid or delay loss of egg clutches. The population has since increased with more than 20% annually (Øien & Aarvak/BirdLife Norway pers. comm.).

In Finland, nesting was last confirmed in 1995 (Øien et al. 2001), though birds continue to be seen close to potential breeding areas virtually annually (P. Tolvanen pers. comm.). Figure 2 shows the contraction in range from the 1950s to the present day.

At the Valdak Marshes in northern Norway, which is the most important staging area in the Nordic countries to date and which hosts up to 85% of the Fennoscandian population during spring migration (Aarvak et al. 2009), numbers of Lesser White-fronted Geese staging in spring numbered 67 individuals in 2014 (data from BirdLife Norway). A slight increase in numbers has also been recorded at a second spring staging area, the Bothnian Bay coast of Finland with 52 individuals counted in 2012 (www.piskulka.net).

The status of birds nesting on the Kola Peninsula in Russia remains unclear (Aiko et al. 2000). A field expedition in June 2001 gathered additional information and the report on this work concludes: “it is still possible that the total Lesser White-fronted Goose breeding population of the whole Kola peninsula could be perhaps some tens of pairs, taking into account the huge area of potentially suitable and mostly intact breeding habitat” (Timonen & Tolvanen 2004).

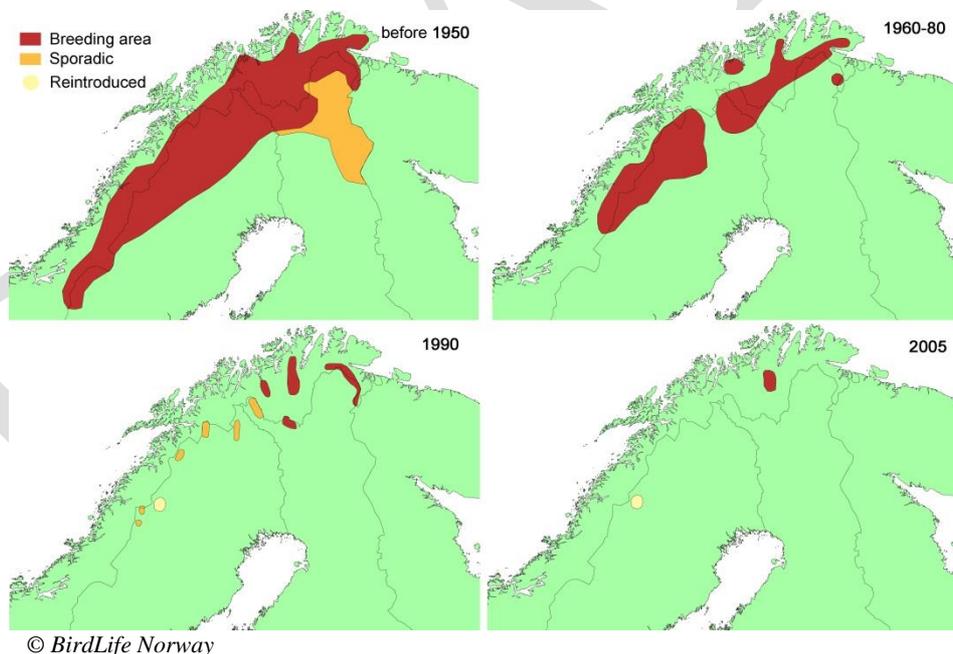


Figure 2. The breeding distribution of the Lesser White-fronted Goose in Fennoscandia before 1950 (above left), 1960-1980 (above right), at the beginning of the 1990s (below left; after von Essen et al. 1996), and in 2005 (below right) (BirdLife Norway).

1.2.4. Eastern main population – trend and estimate

The Eastern main population, which breeds in Russia eastwards from the Taimyr Peninsula and winters mainly in China, is currently considered to be stable at 20,000 individuals. Most of the wintering birds in China are concentrated at one site (East

Dongting Lake), however, which makes the population extremely vulnerable to habitat degradation and land use changes (Wang et al. 2012). A growing number of Lesser White-fronted Geese from the Eastern main population have been observed wintering in Japan during the past 20 years, with a current estimate of about 100 wintering birds (pers. comment Toshio Ikeuchi).

1.2.5. Reinforced Swedish population – trend and estimate

A Lesser White-fronted Goose captive-breeding programme was established in Sweden in the late 1970s and the first releases into the wild took place in 1981 (von Essen 1996). No captive-bred geese were released during the period 2000–2009, following the discovery that birds in the captive breeding stock were carrying genes of Greater White-fronted Goose *Anser albifrons* and Greylag Geese *Anser anser* (Ruokonen/Lundquist – check ref.; Å. Andersson pers. comm.). Sweden has since established a new captive-breeding programme based on wild-caught birds from Russia and has since 2010 been releasing descendants of these birds into their population in an attempt to dilute alien genes.

The population was estimated at 92 individuals at the main wintering grounds in the Netherlands 2011, with 74-76 individuals observed in Sweden during spring migration, with an increasing trend (RECAP4 minutes 2011). However, Sweden reported a suspected decline in the population following the breeding season in 2012 due to poor breeding success and high predation on adult birds, with only 60 individuals recorded during autumn migration in Sweden (RECAP5 minutes 2013).

1.3. Distribution throughout the Annual Cycle

The populations have differing migration routes and wintering grounds, though there is known to be partial overlap in the case of the Fennoscandian and Western main populations resulting from the elaborate system of their moult migrations. The main flyways and known sites are indicated in Figure 1.

1.3.1. Western main population – annual distribution

Ornithological field coverage remains patchy in most of the countries frequented by the Western main population, as the areas and distances involved are sometimes vast and access is frequently difficult. Satellite tracking and increased monitoring efforts have provided vital clues, but significant gaps still remain in relation to staging sites and especially for the main wintering grounds which still remain virtually unknown.

Following the breeding season in the European tundra in Russia west of the Taimyr Peninsula, most individuals migrate south along the Ob River Valley to staging sites in southern and south-western Russia and more importantly in north-west Kazakhstan. Known staging areas include: parts of the Ob river valley in Russia (Rozenfeld 2013); the lakes and agricultural land of Kustanay Oblast, north-west Kazakhstan; the Sultan-Aksuat lakes system in the western part of neighbouring Northern-Kazakhstan Oblast, (Yerokhov et al. 2005); and the Shalkar lakes on the border of the Orenburg area (Russia) and Aqtobe province (Kazakhstan) (<http://piskulka.net/>).

The main wintering areas remain mostly unknown but are thought to be around the northern Black Sea coast, the southern Caspian Sea, inland wetlands of Azerbaijan, and the inland wetlands of Iran and Iraq, especially the Mesopotamian Marshes.

Expeditions in Azerbaijan in January 2012 and 2013 confirmed that Lesser White-fronted Geese still winter regularly in at least two sites in the country (Kizil Agach State Nature Reserve and Aggol National Park; Eskelin, Sultanov & Timonen 2012 & 2013). During the winter of 2004/2005, satellite tracking of one individual ringed and satellite-tagged in northern Russia confirmed that at least some birds continue to winter in Iraq (Morozov & Aarvak 2004, Øien & Aarvak 2005; <http://piskulka.net/>). Subsequently two birds were followed in 2006 to the western shore of the Caspian Sea to the border area between Iran and Azerbaijan, one bird later reaching Iraq (<http://piskulka.net/>).

Subsequent satellite tracking data has shown that these border areas around the Aras Water reservoir could possibly be very important for wintering Lesser White-fronted Geese (T. Aarvak pers. comm., Morozov et al. 2015). Increased monitoring efforts and international expeditions have confirmed that birds also still use several sites in Iran - with 2750 individuals counted at the Aras Water reservoir in February 2015. The BirdLife International Middle East office passed on information received in 2010 of 39 live Lesser White-fronted Geese at a market in Baghdad, further confirming the existence of wintering geese in Iraq. An expedition to Syria in 2010 located some 70 Lesser White-fronted Geese at Lake Jabboul, whilst only seven were reported at the same site the following year (Eskelin & Timonen 2010 & 2011). Limited winter count data are available for sites in Uzbekistan that formerly held significant numbers of wintering Lesser White-fronted Geese.

Small numbers of vagrant Lesser White-fronted Geese occur regularly during the winter in Bulgaria, Germany, Hungary and Romania scattered among flocks of Greater White-fronted Geese. There are indications that the majority of these birds may belong to the Western main population (for an overview of observations visit <http://piskulka.net/>).

1.3.2 Fennoscandian population – annual distribution

The small Fennoscandian population now only breeds in northern Norway, the Russian Kola Peninsula and possibly in Finnish Lapland. Satellite tracking has shown that non-breeding birds from the Fennoscandian population undertake an autumn migration eastwards to the Kanin Peninsula, Kolgujev Island (and even as far as the Taimyr Peninsula) in northern Russia (Aarvak & Øien 2003). Successful breeders moult on the breeding grounds, but then also undertake a migration eastwards to the Kanin Peninsula. There is subsequently a migratory divide, with some birds heading south-west, presumably through western Russia (Lake Ladoga region), western Estonia, Poland and eastern Germany, and then south-east, via a major staging area in Hungary (Hortobágy) and Greece (Lake Kerkini) to wintering grounds in north-east Greece (Evros Delta), adjacent to the Turkish border. There is also evidence that these birds visit the Turkish side of the Evros Delta and/or other sites in westernmost Turkey during the winter. Other birds migrate eastwards, crossing the Ural mountains, and then turn south through the Ob valley to north-west Kazakhstan and onwards to presumed Black Sea and Caspian Sea wintering areas, thought to be shared with the Western main population (Lorentsen et al. 1998; Aarvak & Øien 2003). Satellite-tracking has shown that other individuals re-join the rest of the population at the wintering grounds in Greece (LIFE Nature project 2005–2008 *Conservation of the Lesser White-fronted Goose on European migration route* – see Figure 4).

Important spring staging sites on the Baltic Sea include the Nemunas Delta, Lithuania; the Matsalu Bay and Noarootsi Peninsula areas in Estonia; the Bothnian Bay area, near

Iraq	NO	YES (?)	YES
Kazakhstan	NO	YES	NO
Poland	NO	YES	YES (?)
Romania	NO	YES (?)	YES (?)
Russian Federation	YES	YES	YES (occasional)
Syrian Arab Republic	NO	YES	YES
Turkey	NO	YES	YES (?)
Turkmenistan	NO	YES	YES
Ukraine	NO	YES	YES
Uzbekistan	NO	YES	YES
Fennoscandian population			
Range state	Breeding	Staging	Wintering
Bulgaria	NO	YES	YES
Estonia	NO	YES	NO
Finland	[YES] (possibly extinct)	YES	NO
Germany	NO	YES	NO
Greece	NO	YES	YES
Hungary	NO	YES	NO
Kazakhstan	NO	YES	NO
Lithuania	NO	YES	NO
Norway	YES	YES	NO
Poland ³	NO	YES (?)	YES (occasional)
Russian Federation	YES (Kola Peninsula only)	YES	NO
Turkey	NO	YES (?)	YES (?)
Ukraine	NO	YES	YES (?)

(?) = uncertain and/or significant shortage of information

1.4. Survival and Productivity, Life Cycle and Habitat Requirements

1.4.1. Survival and productivity

Rather good productivity and survival data are available for the Fennoscandian population and an elasticity analysis has been performed (Lampila 2001, Markkola & Lampila 2003), but patchy count data and the low number of ringing recoveries means that evidence for the Western main population is essentially anecdotal. Lampila (2001) demonstrated that low survival was the key factor determining the negative population development for Fennoscandian Lesser White-fronted Geese.

Further research has shown that the productivity of the Fennoscandian population has less annual variation than is the case for other arctic geese (this may be because the species breeds further south than other arctic goose species). Survival of 1st calendar year (1-cy) and 2nd calendar year (2-cy) birds is relatively poor. Modelling work indicates that increases in both adult and 1-cy/2-cy survival are required in order for the

³ The available information for Poland makes this country a 'borderline' case for listing as a Principal Range State. It is included here on a provisional and precautionary basis, but further discussion and data are required to clarify Poland's exact status.

current population decline to be arrested and reversed. A very small increase in adult survival can have a greater impact on the overall population level than an apparently more significant increase in juvenile/immature survival. (J. Markkola, P. Lampila pers. comm; Markkola and Lampila 2003).

Productivity has been measured for the Fennoscandian population annually since 1994. For better population modelling, especially for the Western Main population, productivity of Lesser White-fronted Geese should also be assessed by counting the proportion of juvenile birds in autumn staging flocks in north-west Kazakhstan. However, the latter requires a long-term, intensive and consistent effort. Calculating survival rates is more challenging still, since this requires larger numbers of colour ringed birds and a high annual re-sighting effort on important staging/wintering sites. This is done for the Fennoscandian population, but is highly needed also for the Western Main population.

1.4.2. Life cycle

Because Lesser White-fronted Geese are long-distance migrants, international cooperation is a prerequisite for effective conservation. Furthermore, as breeding occurs in the sub-arctic zone and wintering in semi-arid/arid zone countries, the annual life cycle is prone to the influence of weather. Given that there are significant gaps in knowledge about the movements of the Western main population, there is a corresponding lack of detail concerning important aspects of the life cycle of these birds, whereas the life cycles of the Fennoscandian population is relatively well known.

1.4.3. Habitat requirements

Lesser White-fronted Geese breed in sub-arctic tundra and forest-tundra, yet the exact breeding habitat requirements vary in different parts of the distribution range. These range from the wetland system on the mountain plateau of Finnmark in northern Norway which serves as the core breeding area for the Fennoscandian population in Norway (Øien et al. 2001) to nests located on rocky river cliffs, steep river slopes growing shrubs and grasses as well as in dwarf birch tundra on watershed slopes close to rivers and in mountain foothills in the Polar Ural and Yamal Peninsula breeding areas of the Western main population (Morozov, pers. comm.).

Variations are also found on the staging areas: from the extensive salt and brackish marshes of the main staging area of the Fennoscandian population at the Valdak Marshes in northern Norway (Aarvak & Øien 2001) to the freshwater lakes as well as wetlands and surrounding grasslands of the major autumn staging grounds in the Kustanay region of north-west Kazakhstan. A common denominator for habitat selection appears to be the need for short salt tolerant vegetation that dominates the diet of the Lesser White-fronted Goose (see Lorentsen et al 1990, Wang et al. 2013).

The wintering grounds are only partially known, but include shallow bays, lakes and wetland complexes (freshwater, brackish water and saltwater wetland types) and surrounding cultivated land and semi-natural grasslands in Azerbaijan, Bulgaria, Greece, Iran, Iraq, Romania, Syria, Turkmenistan, Ukraine and Uzbekistan. In Hungary, individuals presumed to originate from the Western main population mainly feed on agricultural lands in large mixed flocks with other geese (Bogyó et al. 2014).

2 - Threats

2.1. General overview

Despite substantial progress made in the conservation of the Lesser White-fronted Goose during the seven years since the adoption of the first AEWA International Single Species Action Plan in 2008, the threats facing the species remain manifold. High adult mortality as well as habitat loss, conversion and degradation have been reconfirmed by the AEWA Lesser White-fronted Goose International Working Group to be the main factors hampering the recovery of the species.

In addition, major knowledge gaps concerning the species' numbers, distribution and movements still exist. This is also considered to be a deficiency as it greatly hampers the implementation of appropriate conservation measures.

The underlying threats as identified and rated by the Working Group are outlined below.

2.2. Critical and high threats

2.2.1 *Illegal hunting (critical)*

Although the species is legally protected across virtually its entire range, hunting is still considered to be the primary cause of mortality and the most important threat that this Action Plan has to tackle. This is confirmed by the national reports submitted by range states to the AEWA Lesser White-fronted Goose International Working Group in 2010 and 2012.

Hunting has been estimated to have a critical impact on the species as whole and it is thought that more than 95% of the global population is affected by over-hunting (UNEP/WCMC, 2003). Within the AEWA area, hunting pressure is especially high in both the Russian Federation and Kazakhstan.

Additionally it should be noted that spring hunting of geese and waterfowl is still legal and widely practiced in Russia and other ex-Soviet countries. There are high levels of ignorance and/or disregard of the applicable hunting laws more broadly. Spring hunting of ducks is still legal in one of the municipalities where breeding occurs in Norway. However, both geese and swans are also shot during this period, albeit illegally.

One of the main difficulties in the implementation of conservation measures to tackle the threat of hunting arises from the difficulty to distinguish between Lesser White-fronted Geese and the very similar 'look alike' species, the Greater White-fronted Goose *Anser albifrons*, which is an important legal quarry species. The two species often migrate together in mixed flocks and when the birds are in flight it may be difficult even for experienced ornithologists to separate between them.

Indirect pressure as a result of hunting includes disturbance caused by hunting for other species which may lead to loss of condition, thereby contributing to mortality. This type of disturbance occurs, for example, at Kizil Agach State Nature Reserve in Azerbaijan where illegal hunting of ducks and coots regularly disturbs roosting and feeding geese. Heavy hunting pressure is also common in the coastal wetlands along the western shore of the Black Sea where Lesser White-fronted Geese winter.

2.2.2 Predation (critical/local)

The expansion of Red Fox *Vulpes vulpes* in the breeding areas has in recent years been recognized as a key threat for the Fennoscandian population. For birds of the Fennoscandian population, the threat posed by Red Fox predation (mainly on nests) is considered to have a double negative effect as unsuccessful breeders are more likely to undertake the longer loop migration to moulting grounds in the Russian tundra, returning to the wintering grounds in south-eastern Europe via migration routes where hunting pressure is much higher. A culling program in the core breeding area in Norway has been implemented since 2008, and this has since led to a positive population development for the Fennoscandian population (BirdLife Norway, unpublished).

There is also anecdotal evidence that disturbance by other predators, such as raptors, may also be having a significant impact on the Fennoscandian population during spring staging and possibly also during breeding (M. Ekker, T. Aarvak pers. comm.). As for all arctic breeding birds, predation is noted to be higher in years when small mammal prey is less abundant.

The Red Fox is possibly also spreading northwards in western Russia and could therefore also pose a threat to the Western main population, but limited information is available.

2.2.3 Farming practices (critical)

The threat from farming practices leading to habitat loss and degradation were ranked as critical by range states, whereby land abandonment and overgrazing were highlighted in particular.

Abandonment of traditional agricultural land-management practices is a strong trend in many countries of Central and Eastern Europe and Central Asia, and has been a significant factor in parts of Fennoscandia. In some cases, such as the decline in mowing of coastal and sub-alpine meadows at staging sites around the Baltic Sea, this initially led to the deterioration and loss of key Lesser White-fronted Geese feeding habitat. However, the situation has improved markedly in the Baltic region over the last ten years and most actual and potential staging meadows are managed by grazing/mowing thanks to EU agri-environmental payments (J. Markkola, pers. comm.). In Kazakhstan, the period from 1955 to 1990 was one of intensive grain production and the shoreline and near-shoreline areas of all key lakes were regularly cultivated and sown with grain. During the last 10 to 15 years, however, much of this land has been abandoned and the distances to the main goose feeding areas have increased to 10-20 km or more (S. Yerokhov, pers comm).

Over-grazing of tundra vegetation by semi-domestic Reindeer *Rangifer tarandus* may threaten the quality of breeding habitat for the Fennoscandian population, though impacts appear to vary from country to country.

Extensive areas of grassland and wetland in the staging and wintering areas have been converted for agricultural use. Within Europe, agricultural intensification resulted in the loss and degradation of staging/wintering areas in Greece. However the relationship between agricultural intensification and the use of land by geese is complex. For example, in recent decades new goose wintering areas have been identified in

Tajikistan, Turkmenistan and Uzbekistan, where irrigated fields are used for the production of wheat and rice. These sites provide suitable goose staging/wintering habitat, but are subject to high hunting pressure. Wheat fields in Kazakhstan also provide important feeding areas (P. Tolvanen, T. Heinicke pers. comm.). It is thought that the use of farm land and similar human mediated habitats is likely an effect of the destruction of natural steppe and coastal habitats. When natural habitats are available, these are preferred by the geese (T. Aarvak pers. comm., Bogyó et al. 2014).

2.2.4. Dam construction, river regulation and wetland drainage in non-breeding areas (critical)

The environmental disaster in the Aral Sea basin, owing largely to the misguided diversion of inflow for intensive irrigation, included the destruction of former key staging areas in Uzbekistan (Madsen, 1996; UNEP/WCMC, 2004; E. Kreuzberg pers. comm.). Large areas of the Mesopotamian Marshes were deliberately drained under the former Iraqi regime – with consequences in both Iraq and Iran - while the Tigris and Euphrates rivers (and associated wetlands) in Iraq have suffered from reduced flow due to the construction of dams in upstream countries such as Turkey. Concentration of birds into remaining wetlands is likely to make them more vulnerable to hunting. The current international programmes for restoring/reflooding of large areas of the Mesopotamian Marshes is likely to benefit the species considerably.

Around key staging areas in Kazakhstan, such as Lake Kulykol, much of the inflow from spring floodwater is diverted to dams that provide water for hay meadows and cattle grazing (S. Yerokhov, pers comm). A comparable situation is found in the formerly extensive coastal and inland wetlands of Azerbaijan that were drained for agriculture. The remaining wetlands cover only a small fraction of the previous area and suffer from severe water management problems – e.g. lack of water and pollution by pesticides (T. Heinicke pers. comm.). In Ukraine, damming and regulation of the Dniepr and Dniester rivers have caused reduced flow to the extensive meadows in the Dniester delta and along the Lower Dnepr valley (I. Rusev pers. comm.).

2.2.5. Windfarm development on the Black Sea coast (high/local)

Windfarm developments along the Black Sea coast increasingly pose a threat to all bird species which frequent the area - in particular the Endangered Red-breasted Goose *Branta ruficollis*. As described in the AEWA Single Species Action Plan for the Red-breasted Goose (2011), windfarms affect birds through collision with turbines and disturbance displacement, which can lead to increased direct mortality as well as preventing access to feeding areas. Lesser White-fronted Geese from both the Fennoscandian and Western main populations are known to migrate along the Black Sea Coast and are therefore also increasingly at risk from expanding windfarm developments.

2.3 Medium and low threats

2.3.1 Disturbance (medium)

Disturbance was ranked by the Working Group as a medium threat. However, many range states also noted the causes of disturbance to be increasing. Such disturbance may lead to loss of condition and increased adult mortality, with birds less able to survive

winter or the rigours of long-distance migration as well as to decreased reproduction success.

Disturbance caused by recreation and tourism activities as well as infrastructure developments are reportedly affecting both populations and migratory routes to a certain degree. This includes, for example, fishing, the use of helicopters and all-terrain vehicles, the development and operation of gas- and oil-pipeline installations, road construction, power-line installations etc. In the core-breeding area of the Fennoscandian population in Norway, disturbance by recreation is increasing due to fishing as well as off-road cycling. An organised off-road bicycle race now even runs through the area (Karvonen, R. 2012).

Disturbance caused by the deliberate scaring of geese by farmers has been reported in the range states along the Black Sea Coast. Bulgaria and Romania also reported disturbance by fishermen on lakes as a threat. Disturbance by birdwatchers and research initiatives has also been highlighted as a potential problem – including research activities being carried out for the Lesser White-fronted Goose. In addition, disturbance caused by natural resource use activities (such as fishing and berry picking) and reindeer herding was reported for the staging and breeding areas of the Fennoscandian population.

2.3.2 Poisoning (medium/local)

Bulgaria, Romania and Ukraine reported accidental poisoning as a medium threat to the species. It is known that poisoned bait is used in China specifically to kill geese, including Lesser White-fronted Geese of the Eastern main subpopulation. But there is no evidence to date of intentional poisoning of geese within the EU and/or AEWA Agreement Area. Cases of accidental poisoning of migratory waterbirds were also reported in 2004 in Germany.

2.3.3 Possible negative effects due to interaction with released and/or escaped Lesser White-fronted Geese (medium)

Particularly with regard to individuals from the small Fennoscandian population, a risk is seen in potential interactions with released or escaped Lesser White-fronted Geese, which could lead to the diminished genetic integrity and altered behaviour of native birds and their offspring as well as cause birds to diverge from their native flyways. Sightings of released/escaped birds are regularly reported in Finland, Norway, Estonia and Lithuania. These originate mainly from the Swedish release scheme or are escapees from Germany, Finland and the Netherlands.

Past releases of captive-bred birds in Sweden were found to contain birds with alien genetic make-up. The immediate risk presented by the occurrence of alien genes in the Swedish population to other Lesser White-fronted Goose populations has been assessed to be low at present and Sweden has released captive bred birds stemming from the Western main population in an attempt to alleviate the issue. However, as the Fennoscandian population increases, it is expected that individuals will recolonize 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 concerns also exist regarding a 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. The unknown genetic make-up of birds from other deliberate releases as well as escaped birds from private collections and zoos, which could potentially interact with individuals from both Fennoscandian and Western main populations is also a cause for concern.

2.4 Potential threats

Potential threats are those factors that pose a potential risk to geese and other birds in general, but for which no significant adverse impacts relating specifically to Lesser White-fronted Geese are known. Among those issues are:

- high-tension power lines;
- bird disease;
- poor weather (potentially leading to breeding failure and/or poor foraging conditions along the entire migratory routes);
- climate change and tundra shrinkage.

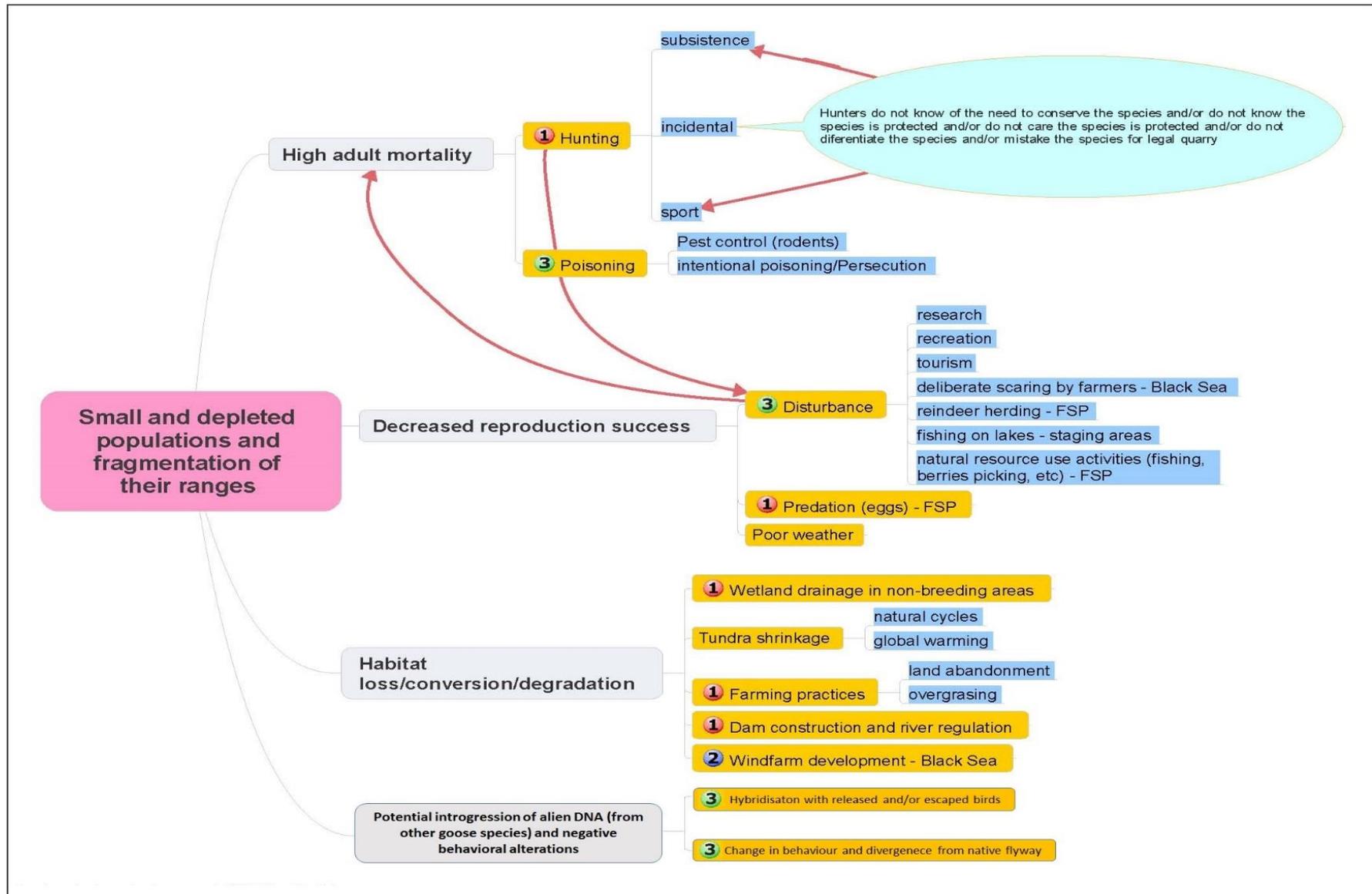
2.5 Climate change

Being a long-distance Palearctic migrant, climate change is expected to have several direct and indirect impacts on the Lesser White-fronted Goose. Whilst tackling climate change is clearly beyond the scope of this Action Plan, the possible effects of climate change should be kept in mind when implementing conservation measures, such as management plans for critical sites.

Climate change is likely to have a significant impact on the sub-Arctic tundra ecosystem of the breeding grounds of the Lesser White-fronted Goose. Possible consequences include direct habitat loss, but also more subtle and indirect adverse impacts such as the breakdown of food chains and the further expansion of the range of Red Fox *Vulpes vulpes*. The most likely effect of the increasing temperature is a change in feeding conditions through altered vegetation. Whether this would be positive or negative is unknown.

Climate change is also likely to have impacts on the staging and wintering areas of the Lesser White-fronted Goose. For example, increasingly mild winters might mean that geese remain further north than usual in some years, or have access to higher quality food items, thereby increasing survival and reproductive success. Shifting rainfall patterns could potentially lead to long-term shifts in migration routes and wintering areas. The fact that the species winters largely in and around semi-arid/arid-zone wetlands, which naturally undergo both significant year-to-year fluctuations and long-term cyclic variations, may make anthropogenic climate change impacts difficult to detect.

Figure 4 – Threat Analysis



3- Gaps in Knowledge

Current knowledge of the Lesser White-fronted Goose is limited in several areas that have crucial relevance for the successful implementation of comprehensive conservation measures.

Key areas where current information is inadequate include:

- Wintering areas of the Western main population are unknown (*critical*); Azerbaijan has been confirmed to hold wintering geese of the Western main population on a regular basis, but no effective and regular protection or monitoring systems exist. Also, the wintering areas of most of the population remain unknown. It is thought that a substantial part of the Western main population may winter in Iraq.
- Not all breeding sites of the Western main and Fennoscandian populations are known (*medium*)
- The significance of many sites identified through satellite tracking is unknown (*medium*)
- The impact of hunting on the Western main population is unknown (number of shot birds, also at site level) (*medium*)
- Population size and trend estimates for the Western main population are unknown (*medium*)
- Many staging sites of the Western main population are still unknown (*medium*)
- Fennoscandian population – one month mystery absence during winter (*high*): At least half of the Fennoscandian main flock “disappears” to an unknown site (or sites) for approximately 2 weeks to one month between their staging site at Lake Kerkini, Greece and main wintering site at the Evros Delta in Greece.
- Exchange of birds between the Western main and Eastern main populations (*low*)
- Population delineation (Fennoscandian vs. Western main population) (*low*).

4. Policies and Legislation Relevant for Management

4.1. International Conservation and Legal Status

The Lesser White-fronted Goose is globally threatened, being recognized as Vulnerable by the IUCN and ranked by BirdLife International as ‘SPEC 1’ within Europe, denoting a European species of global conservation concern. The species is classified as Endangered in Europe and Critically Endangered within the European Union according to the 2015 European Red List Assessment. It is listed in Annex 1 of the European Council Directive on the conservation of Wild Birds (79/409/EEC 1979, 2009/147/EC 2009), in Column A of the Action Plan under the African-Eurasian Migratory Waterbird Agreement (AEWA) and in Annex II ‘Strictly protected species’ of the Bern Convention.

Table 2. Summary of the international conservation and legal status of the Lesser White-fronted Goose *Anser erythropus*

Global Status ⁴	European Status	SPEC ⁵ categ.	EU Birds Directive ⁶	Bern Convention ⁷	CMS ⁸	AEWA ⁹	CITES ¹⁰
Vulnerable	Endangered ¹¹	SPEC 1	Annex I	Appendix II	Appendix I	NE Europe, W Siberia/ Black Sea, Caspian p.: A 1a 1b 2 Fennosc. p.: A 1a 1b 1c	Not listed

It is important to note that the international instruments mentioned here – such as the Directives of the European Union - do not apply throughout the range of the Lesser White-fronted Goose.

Table 3. Applicability of major international conservation instruments to Principal Ranges States for the Lesser White-fronted Goose *Anser erythropus*¹².

Principal State	Range	EU Member State	Party to AEWA	Party to CMS	Party to Bern	Party to CBD	Party to Ramsar
Azerbaijan		No	No	No	Yes	Yes	Yes
Bulgaria		Yes	Yes	Yes	Yes	Yes	Yes
Estonia		Yes	Yes	Yes	Yes	Yes	Yes
Finland		Yes	Yes	Yes	Yes	Yes	Yes
Germany		Yes	Yes	Yes	Yes	Yes	Yes

⁴ Source: IUCN Red List of Threatened Species (www.iucnredlist.org)

⁵ Species of European Conservation Concern

⁶ European Council Directive on the Conservation of Wild Birds (79/409/EEC 1979, 2009/147/EC 2009)

⁷ Convention on the Conservation of European Wildlife and Natural Habitats, Bern, 1979

⁸ Convention on Migratory Species, Bonn, 1979

⁹ Agreement on the Conservation of African-Eurasian Migratory Waterbirds

¹⁰ Convention on International Trade in Endangered Species of Wild Flora and Fauna, 1973

¹¹ Source: 2015 European Red List Assessment

¹² As per information posted on the websites of the relevant treaty secretariats in July 2013.

Greece	Yes	Signatory	Yes	Yes	Yes	Yes
Hungary	Yes	Yes	Yes	Yes	Yes	Yes
I. R. of Iran	No	No	Yes	No	Yes	Yes
Iraq	No	No	No	No	Yes	Yes
Kazakhstan	No	No	Yes	No	Yes	Yes
Lithuania	Yes	Yes	Yes	Yes	Yes	Yes
Norway	No	Yes	Yes	Yes	Yes	Yes
Poland	Yes	No	Yes	Yes	Yes	Yes
Romania	Yes	Yes	Yes	Yes	Yes	Yes
Russian Fed.	No	No	No	No	Yes	Yes
Syrian A. R.	No	Yes	Yes	No	Yes	Yes
Turkey	Candidate	No	No	Yes	Yes	Yes
Turkmenistan	No	No	No	No	Yes	Yes
Ukraine	No	Yes	Yes	Yes	Yes	Yes
Uzbekistan	No	Yes	Yes	No	Yes	Yes
EU/EC	N/A	Yes	Yes	Yes	Yes	No

4.2. National Policies, Legislation and Ongoing Activities

Information on national policies, legislation and ongoing activities such as the adoption of National Action Plans for the Lesser White-fronted Goose is provided in Annex I. The general picture is one of a high level of legal protection – at least on paper – in most of the key countries. The main challenge is one of implementation and enforcement of conservation legislation.

4.3. Site and Habitat Protection

While the Fennoscandian population is quite well covered by site protection designations (at least along the European flyways) this is not the case for the Western main population, which lacks adequate site protection in many range states. In many cases there is insufficient information available for assessing the adequacy of site/habitat protection measures.

In order to bring focus to site and habitat protection efforts range states established a Network of Critical Sites for the species at the 2nd Meeting of the AEWA Lesser White-fronted Goose International Working Group in November 2012. Countries were requested to designate sites (holding nationally important numbers of Lesser White-fronted Geese on a regular basis) critical for the conservation and recovery of the species. Future conservation and site management measures will be focused on the selected sites.

The list of critical sites is provided in Annex II. However, it should be noted that the list is flexible and will be subject to change depending on new monitoring information etc. The up-to-date list of critical sites for each range state can be found on the Working Group website (<http://lesserwhitefrontedgoose.aewa.info>). Additional sites are listed in Annex III, some of which have been prioritized for surveys and monitoring in the short to medium term.

4.4. Recent Conservation Measures and Coordination of Implementation

4.4.1. AEWA Lesser White-fronted Goose International Working Group

The AEWA Lesser White-fronted Goose International Working Group was convened by the UNEP/AEWA Secretariat in 2009 following the adoption of the first AEWA International Single Species Action Plan for the Lesser White-fronted Goose at the 4th Session of the Meeting of the AEWA Parties in Madagascar in 2008. In line with the concept of AEWA Single Species Working Groups, members consist of designated governmental representatives and species experts from each of the 20 principle range states as well as observers from international conservation and hunting organizations. Coordination is currently provided by the UNEP/AEWA Secretariat and a Chair country is selected by the Working Group. All meeting documents as well as final reports can be found on the AEWA website (www.unep-aewa.org/meetings/other_related_meetings.htm).

The Working Group has – amongst other activities - established a national reporting practice, with range states submitting reports on the status of the Lesser White-fronted Goose as well as conservation activities in advance of each meeting. The national reporting format closely follows the results and actions of the action plan in order to provide the Working Group with relevant information on the basis of which to monitor and guide implementation.

A website and internal workspace have also been developed by the UNEP/AEWA Secretariat to facilitate the inter-sessional communication between Working Group members and to communicate the activities of the Working Group to the wider conservation community. For up-to-date information on Working Group activities and upcoming meetings, please visit the Working Group website (<http://lesserwhitefrontedgoose.aewa.info>).

In addition, at its second meeting in November 2012, the AEWA Lesser White-fronted Goose International Working Group took the decision to pursue the possibility of including the Eastern main population under the International Action Plan. Due to time constraints this was not realized in time for the 2015 revision, but the respective new range states (China, Japan, Mongolia and South Korea) will be invited to designate representatives to the Working Group in order to allow for closer collaboration on the conservation of the species across its global range.

4.4.2 Committee on Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia

The Committee on Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia (RECAP) was convened in 2008 as a sub-group of the International Working Group with the aim to discuss and agree on captive breeding and reintroduction issues in the Nordic countries. Finland, Norway and Sweden were full members of the Committee and Germany was an observer to the group. All meeting documents as well as final reports can be found on the AEWA website (www.unep-aewa.org/meetings/other_related_meetings.htm).

The Committee was abolished by the members in 2015 [NOTE: this still needs to be confirmed officially by all members].

4.4.3 Recent conservation projects

A five-year EU LIFE+ project “Safeguarding the Lesser White-fronted Goose Fennoscandian population in key wintering and staging sites within the European flyway” (LIFE10NAT/GR/638) commenced in 2011 with the aim of further improving the conservation of the small Fennoscandian population along its migratory routes in Europe (Project website hosted by WWF Finland at <http://wwf.fi/en/our-earth/lwfg/>).

Several international field missions and projects have also been implemented during the period 2009-2015 in an effort to close knowledge gaps and to enhance the protection of the species in key range states for the Western main population such as Russia, Kazakhstan, Syria, Ukraine, Azerbaijan and the Islamic Republic of Iran. More information on past and ongoing projects as well as available awareness-raising materials developed under the auspices of the Working Group can be found on the AEWA Lesser White-fronted Goose International Working Group website (<http://lesserwhitefrontedgoose.aewa.info>).

In April 2015 the Arctic Council adopted the first workplan (2015-2019) of the Arctic Migratory Birds Initiative (AMBI) under its Working Group on the Conservation of Arctic Flora and Fauna (CAFF). AMBI is designed to improve the conservation status and secure the long-term sustainability of declining Arctic breeding migratory bird populations and includes the Lesser White-fronted Goose as a priority species for both the African-Eurasian and East Asian-Australasian flyways. AMBI is expected to bring added value to the ongoing international Lesser White-fronted Goose work in terms of political support and funding possibilities. All actions envisaged for the African-Eurasian flyway follow the priorities set out in this Action Plan. The implementation of the AMBI actions will be coordinated by the AEWA Lesser White-fronted Goose International Working Group Coordinator in collaboration with relevant range states. For more information, please visit the CAFF website: <http://www.caff.is/arctic-migratory-birds-initiative-ambi/african-eurasian-flyway>.

4.4.4. Monitoring

Monitoring of the species takes place on a regular basis in almost all range states, despite the lack of national level monitoring schemes in many countries. As mentioned above, monitoring along the European flyways of the Fennoscandian population is very thorough, yet coverage of the Western main population remains patchy. The lack of trained field personnel and bird watchers in general as well as the lack of funding and adequate equipment have been reported by range states as the most common issues preventing a more consistent monitoring of the species.

In order to strengthen monitoring efforts the AEWA Lesser White-fronted Goose International Working Group established a Common Monitoring Scheme for the species at its 2nd Meeting in November 2012, which builds on the monitoring system developed under the EU LIFE+ project mentioned above. The common scheme

consists of 1) clear guidance on identification and field monitoring methods¹³; 2) a network of trained ornithologists/experts covering critical sites across the species' range and; 3) a common platform for reporting and accessing observations/data (hosted by the Norwegian Ornithological Society at www.piskulka.net).

In conjunction with the monitoring scheme and within the framework of the current EU LIFE+ project, national monitoring teams are receiving training in Lesser White-fronted Goose identification and monitoring practices. Trainees are in future expected to lead on national monitoring activities for the Lesser White-fronted Goose.

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¹³ www.unep-aewa.org/meetings/en/lwfg_iwg/meeting2/pdf/lwfg_iwg2_7_monitoring.pdf

5. Framework for Action

GOAL: To restore the Lesser White-fronted Goose to a favourable conservation status within the AEWA Agreement area.

INDICATOR	MEANS OF VERIFICATION
<p>Neither the Fennoscandian nor the Western main population qualifies as ‘threatened’ according to the IUCN Red List criteria (Western Main population exceeds 25,000¹⁴ individuals & Fennoscandian population exceeds 1,000¹⁵ individuals) and neither population is declining.</p> <p>Breeding range is stable or expanding.</p> <p>Adequate managed and protected habitat is available at all the critical sites along the species’ flyways.</p>	<p>Conservation Status Review of Migratory Waterbirds with the Agreement Area (triennial report for each AEWA MOP), and the assessments by the AEWA Lesser White-fronted Goose International Working Group.</p>

PURPOSE: To increase the population size and stop the contraction of the species’ range.

INDICATOR	MEANS OF VERIFICATION
<p>A 5-year moving average of the finite rate of population increase (λ) is above 1.0.</p> <p>The extent of breeding range is arrested at current level or expanded.</p>	<p>For the Western main population: counts of autumn flocks in Kustanay oblast, Kazakhstan, covering a large-enough area to avoid effects of local fluctuations caused by year-to-year variations in location and extent of suitable roosting/feeding sites.</p> <p>For the Fennoscandian population: counts of spring flocks at Matsalu Bay and Noarootsi Peninsula, Estonia, at Porsangerfjord, Norway, Evros Delta and/or Kerkini Lake, Greece; counts of spring and autumn flocks at Hortobágy, Hungary.</p> <p>National distribution mapping in breeding range states.</p>

The five **OBJECTIVES** of the plan are to **increase survival rates, prevent further habitat loss, maximise reproductive success, maintain genetic integrity and native flyways** as well as **close key gaps in knowledge**. The following **18 RESULTS** (to be achieved by 2025) are required to achieve these objectives:

Objective 1: Increase survival rates

¹⁴ Figure derived from the AEWA Action Plan Table 1.

¹⁵ Figure derived from the IUCN Red List criterion D for small populations of a species classified ‘globally vulnerable’.

Result 1.1. Mortality caused by hunting is minimized
Result 1.2. Risk of poisoning is minimized
Objective 2: Prevent further habitat loss and degradation
Result 2.1. All critical sites are afforded appropriate protection status
Result 2.2. All critical sites have management plans and are appropriately managed with the aim of LWfG conservation
Result 2.3. Habitats and their quality are maintained and restored in breeding, staging and wintering areas
Objective 3: Maximise reproductive success
Result 3.1. Disturbance is minimized
Result 3.2. Trampling and overgrazing are avoided
Result 3.3. Predation of eggs and goslings is minimized
Result 3.4. No hunting in the breeding areas
Objective 4: Maintain genetic integrity and native flyways
Result 4.1. The occurrence of released and escaped Lesser White-fronted Geese is monitored.
Result 4.2. Contact between released and/or escaped birds and native Lesser White-fronted Geese is avoided.
Objective 5: Fill key knowledge gaps
Result 5.1. Wintering areas of the Western main population are identified
Result 5.2. Population size and trend estimates of the Western main population are established and regularly monitored
Result 5.3. Significance of sites identified through satellite tracking is verified
Result 5.4. Existence or absence of new staging areas is confirmed
Result 5.5. Location of Fennoscandian population during their one-month absence in winter is identified
Result 5.6. More breeding areas are identified
Result 5.7. Magnitude of hunting impact on the Western main population - especially at critical sites – is identified

These **RESULTS** are to be achieved through the implementation of specific **ACTIONS**, which address the identified key threats (tables 4-8 below). Actions should be implemented in all range states and significant progress should be made on all activities by 2025 unless otherwise indicated. It should be noted that the prioritization of activities will not be equally applicable to all range states.

Range states are further encouraged to adopt **National Action Plans** for the species, which should incorporate the relevant results and actions outlined in this plan.

The **AEWA Lesser White-fronted Goose International Working Group** will provide further coordination and assist range states with the implementation of the plan as well as assess implementation progress based on the national reports provided by the range states. Any major changes or new activities should be discussed and agreed upon between range states within the AEWA Lesser White-fronted Goose International Working Group.

ACTIONS

Table 4. Objective 1: Increase survival rates

INDICATOR: *A 5-year moving average of the number of individuals at regularly monitored spring staging sites.*
VERIFICATION: *Counts of flocks at Hortobágy/Hungary, at Matsalu Bay and Noarootsi Peninsula/Estonia, at Porsangerfjord/Norway, in the Evros Delta & Kerkini/Greece and in Kustanay oblast/Kazakhstan in spring.*

Result	Action	Priority	Timescale	Organizations
1.1 Mortality caused by hunting is minimized	1.1.1. Modify timing of hunting to avoid the time of LWfG presence Applicable: ALL	High	Completed by 2025	Government institutions in charge of nature conservation and hunting in collaboration with LWfG experts, hunting organizations and NGOs
	1.1.2. Ensure that, in principle, hunting legislation affords adequate protection to the LWfG Applicable: ALL	High	Completed by 2018	Government institutions in charge of nature conservation and hunting
	1.1.3. Ensure that sufficient human or financial resources are allocated for the enforcement of hunting legislation, and that these resources are deployed to control and manage hunting effectively and sustainably Applicable: ALL	High	Completed by 2025	Government institutions in charge of nature conservation and hunting
	1.1.4. By 2018 ban goose hunting – in the absence of other feasible protection alternatives – at all critical sites for the LWfG during the period when LWfG are usually present, given the difficulty of reliably distinguishing goose species in flight Applicable: ALL	High	Completed by 2018	Government institutions in charge of nature conservation and hunting in collaboration with LWfG experts, hunting organizations and relevant NGOs
	1.1.5. By 2018 establish no hunting zones (covering both roosting and feeding sites) at all LWfG IBAs, SPAs and Ramsar sites Applicable: ALL	High	Completed by 2018	Government institutions in charge of nature conservation and hunting in collaboration with LWfG experts, hunting organizations and relevant NGOs

	<p>1.1.6. Plant lure crops to direct LWfG away from areas where hunting pressure is known to be high and towards refuge zones</p> <p>Applicable: Kazakhstan, Russia</p>	Medium	ongoing	RGG, National Working Group for the LWfG in Kazakhstan (ACBK)
	<p>1.1.7. Redirect hunting from adults to juveniles in areas where Greater White-fronted Geese and LWfG occur together away from key sites</p> <p>Applicable: Kazakhstan, Russia</p>	Medium	Completed by 2025	Government institutions in charge of hunting, hunting organizations and relevant NGOs
	<p>1.1.8. Implement obligatory training as outlined by the Hunting Charter of the Bern Convention (Nov 2007) for hunters – particularly in Eastern European countries</p> <p>Applicable: [signatories to the Bern Convention, EU]</p>	Medium	Completed by 2025	Government institutions in charge of hunting, hunting organizations and NGOs
	<p>1.1.9. Carry out an information campaign to engage local and European hunting organizations and nature protection NGOs</p> <p>Applicable: Norway, EU member states</p>	Medium	Completed by 2025	AEWA Lesser White-fronted Goose International Working Group in collaboration with the LWfG Coordinator
	<p>1.1.10. Upgrade level of protection from illegal hunting within existing protected areas through training and improved enforcement</p> <p>Applicable: ALL</p>	High	Completed by 2025	Government institutions in charge of nature conservation and hunting
1.2. Risk of poisoning is minimized	<p>1.2.1. Strengthen enforcement of standards of pest control for rodents</p> <p>Applicable: Ukraine, Romania, Bulgaria</p>	High	Completed by 2025	Government institutions in charge of nature conservation and agriculture
	<p>1.2.2. Develop and disseminate guidelines to farmers on the use of toxic substances</p> <p>Applicable: Ukraine, Romania, Bulgaria</p>	High	Completed by 2025	Government institutions in charge of nature conservation and agriculture in collaboration with LWfG experts and relevant NGOs
	<p>1.2.3. Align legislation in range states regarding pesticide use</p> <p>Applicable: Ukraine, Romania, Bulgaria</p>	Medium/ Low	Progress made by 2025	Government institutions in charge of nature conservation and agriculture

Table 5. Objective 2: Prevent further habitat loss and degradation

INDICATOR: *All critical sites for the Lesser White-fronted Goose are protected and managed.*

VERIFICATION: *National government reports to the AEWA Lesser White-fronted Goose International Working Group. Periodic independent assessments carried out by national BirdLife partners as part of their IBA Monitoring Programme.*

Result	Action	Priority	Timescale	Organizations
2.1. All critical sites are afforded appropriate protection status	2.1.1. Confirm all critical sites and update list of critical sites accordingly Applicable: ALL	High	Completed by 2018	National and international conservation NGOs
	2.1.2. Designate critical sites under domestic legislation and international frameworks (Natura2000, Ramsar) Applicable: ALL	High	Completed by 2025	Government institutions in charge of nature conservation
2.2. All critical sites have management plans and are appropriately managed with the aim of LWfG conservation	2.2.1. Incorporate conservation needs of the LWfG into existing management plans where this is still missing Applicable: ALL	High	Completed by 2018	Government institutions in charge of nature conservation in collaboration with LWfG experts and relevant NGOs
	2.2.2. Develop and adopt management plans for critical sites with no plans, where appropriate Applicable: ALL	High	Completed by 2018	Government institutions in charge of nature conservation in collaboration with LWfG experts and relevant NGOs
	2.2.3. Management plans are appropriately financed and implemented Applicable: ALL	High	Completed by 2025	Government institutions in charge of nature conservation
2.3. Habitats and their quality are maintained and restored in breeding, staging and wintering areas	2.3.1. Inventory of habitats/sites requiring restoration/rehabilitation Applicable: ALL	Medium	Substantial progress made by 2025	National and international conservation NGOs
	2.3.2. Feasibility assessment for restoration/rehabilitation Applicable: ALL	Medium	Substantial progress made by 2025	National and international conservation NGOs

	2.3.3. Develop and implement restoration projects Applicable: ALL	Medium	Substantial progress made by 2025	Government institutions in charge of nature conservation in collaboration with LWfG experts and relevant NGOs
	2.3.4. Ensure maintenance of optimal feeding habitat and connectivity between roosting and foraging areas Applicable: ALL	High	Completed by 2018	Government institutions in charge of nature conservation in collaboration with LWfG experts and relevant NGOs

Table 6. Objective 3: Maximise reproductive success

INDICATOR: *Five-year running mean of juveniles reaches 25-30% for both Fennoscandian and Western main populations.*

VERIFICATION: *Counts of autumn flocks in Hortobagy, Hungary and north-west Kazakhstan in October.*

Result	Action	Priority	Timescale	Organizations
3.1. Disturbance is minimized	3.1.1. Regulate reindeer use in critical areas Applicable: Finland, Norway	Medium	ongoing	Government institutions in charge of nature conservation and regulation of reindeer use
	3.1.2. Develop and implement measures in national agri-environmental schemes/legislation to reduce conflicts with farmers Applicable: ALL	Low	Progress made by 2025	Government institutions in charge of nature conservation and agriculture
	3.1.3. Restrict access by boats to roosting sites Applicable: Bulgaria, Romania	Medium	Completed by 2025	Government institutions in charge of nature conservation and regulations concerning fishing
	3.1.4. Regulate natural use activities in the breeding areas Applicable: Finland, Norway	Medium	Completed by 2025	Government institutions in charge of nature conservation
	3.1.5. Regulate recreation and tourism activities in core areas Applicable: ALL	High	Completed by 2018	Government institutions in charge of nature conservation and tourism/recreation

3.2. Trampling and overgrazing are avoided	<i>see 3.1.1. Regulate reindeer use in critical areas</i>	-	-	-
3.3. Predation of eggs and goslings is minimized	3.3.1. Control red fox population in the breeding grounds (see also 1.3.1.) Applicable: Finland, Norway	Essential	ongoing	Government institutions in charge of nature conservation and hunting
3.4. No hunting in the breeding areas	3.4.1. Assess where waterfowl hunting occurs in or near the breeding areas Applicable: Norway, Russia	High	Completed by 2018	National LWfG Working Groups, national conservation NGOs
	3.4.2. Stop waterfowl hunting in the vicinity of the breeding areas Applicable: Norway, Russia	High	Completed by 2018	Government institutions in charge of nature conservation and hunting

Table 7. Objective 4: Maintain genetic integrity and native flyways

INDICATOR: *No pairing and/or breeding between native and released/escaped Lesser White-fronted Geese has been observed.*

VERIFICATION: *National Reports submitted to the AEWA Lesser White-fronted Goose International Working Group.*

Result	Action	Priority	Timescale	Organizations
4.1. The occurrence of released and escaped Lesser White-fronted Geese is monitored.	4.1.1. Undertake regular monitoring and reporting of released and escaped Lesser White-fronted Geese (sightings to be reported on common database: piskulka.net) Applicable: ALL	Medium	Ongoing	Government institutions in charge of nature conservation, national LWfG Working Groups and national conservation NGOs
4.2. Contact between released and/or escaped birds and native Lesser White-fronted Geese is avoided.	4.2.1. Undertake measures to ensure that the contact between released and/or escaped birds and native Lesser White-fronted Geese is avoided. Applicable: ALL	Medium to High	Ongoing	Government institutions in charge of nature conservation and hunting

Table 8. Objective 5: Fill identified knowledge gaps

INDICATOR: *High priority knowledge gaps filled by 2018 and medium priority knowledge gaps filled by 2025.*
VERIFICATION: *Monitoring & expedition reports, National Reports submitted to meetings of the AEWA Lesser White-fronted Goose International Working Group, Papers published in peer-reviewed scientific journals.*

Result	Action	Priority	Timescale	Organizations
5.1. Wintering areas of the Western main population are identified	5.1.1. Undertake satellite-tracking and field surveys Applicable: All range states along Western main population flyway	High	Completed by 2018	National and international conservation NGOs
5.2. Population size and trend estimates of the Western main population are established and regularly monitored	5.2.1. Intensive and regular monitoring in Kazakhstan Applicable: Kazakhstan	High	Completed by 2018; Ongoing	Government institutions in charge of nature conservation, Kazakh LWfG Working Group in collaboration with international LWfG experts
	5.2.2. Establish regular and coordinated monitoring at known wintering sites Applicable: Azerbaijan, Iran, Iraq, Syria, Turkey, Turkmenistan, Uzbekistan	High	Completed by 2018; Ongoing	National and international conservation NGOs coordinated by the LWfG IWG Coordinator
5.3. Significance of sites identified through satellite tracking is verified	5.3.1. Check sites whenever possible within the framework of field surveys	Medium	Completed by 2025	National and international conservation NGOs
5.4. Existence or absence of new staging areas is confirmed	5.4.1. Undertake satellite-tracking and/or field surveys	Medium	Completed by 2024	National and international conservation NGOs
5.5. Location of Fennoscandian population during their one-month absence in Greece is identified	5.5.1. Undertake satellite-tracking and/or field surveys	High	Completed by 2018	National and international conservation NGOs
5.6. More breeding areas are identified	5.6.1. Survey former LWfG breeding areas in Russia, and Fennoscandia	Medium	Completed by 2025	National and international conservation NGOs
5.7. Magnitude of hunting impact on the Western main population - especially at critical sites - is identified	5.7.1. Joint targeted surveys with hunting organizations in critical staging and wintering sites	Medium	Completed by 2025	National and international conservation NGOs

6. References

This revised Action Plan is based on the AEWA Single Species Action Plan for the Conservation of the Lesser White-fronted Goose (Western Palearctic Population) adopted by the 4th AEWA Meeting of the Parties in 2008, which remains an invaluable source of published information on the species:

Jones, T., Martin, K. Barov, B., Nagy, S. (Compilers). 2008. International Single Species Action Plan for the Conservation of the Lesser White-fronted Goose *Anser erythropus*. AEWA Technical Series No. 36. Bonn, Germany.

In addition, this Action Plan is based on the activities undertaken within the framework of the AEWA Lesser White-fronted Goose International Working Group since 2009. In particular, use is made of information from national reports submitted to the Working Group by range states in 2010 and 2012 as well as the outcomes of the facilitated action planning workshop at the 2nd Working Group Meeting in November 2012. The plan also refers to information presented at the meetings of the Committee on Captive Breeding, Reintroduction and Supplementation of Lesser White-fronted Geese in Fennoscandia (RECAP). All national reports and meeting documents are available on the AEWA Lesser White-fronted Goose International Working Group website:

<http://lesserwhitefrontedgoose.aewa.info/>

The following is a listing of those publications cited in the text of this Action Plan. For a more comprehensive species bibliography, also see: www.piskulka.net.

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7. ANNEXES

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Annex 1. – National policies, legislation and ongoing activities for the Lesser White-fronted Goose

RANGE STATE	National Action Plan	National Working Group	National Monitoring Scheme	Legally protected	Adequate protection afforded by hunting legislation	Sufficient resources to control hunting
AZERBAIJAN	<i>In preparation</i>	Yes	No	Yes	No	No
BULGARIA	<i>In preparation</i>	Yes	<i>Partial</i>	Yes	Yes	No
ESTONIA	Yes	No	Yes	Yes	Yes	No
FINLAND	Yes	Yes	Yes	Yes	Yes	Yes
GERMANY	No	No	Yes	Yes	Yes	Yes
GREECE	<i>In preparation</i>	Yes	Yes	Yes	Yes	No
HUNGARY	Yes	Yes	Yes	Yes	Yes	Yes
IRAN	<i>In preparation</i>	Yes	No	Yes	Yes	No
IRAQ	No	No	No	No	No	No
KAZAKHSTAN	Yes	Yes	Yes	Yes	Yes	Yes
LITHUANIA	No	No	No	Yes	Yes	?
NORWAY	Yes	Yes	Yes	Yes	Yes	Yes
POLAND	No	No	No	?	?	?
ROMANIA	No	Yes	<i>Partial</i>	Yes	Yes	No
RUSSIAN FED.	<i>In preparation</i>	Yes	<i>Partial</i>	Yes	Yes	No
SYRIA	No	No	No	Yes	Yes	No
TURKEY	No	Yes	No	Yes	No	No
TURKMENISTAN	No	Yes	No	Yes	Yes	No
UKRAINE	<i>In preparation</i>	Yes	<i>Partial</i>	Yes	No	No
UZBEKISTAN	No	No	No	Yes	Yes	Yes

Annex 2. - List of Critical Sites for the Lesser White-fronted Goose (as of July 2015)

COUNTRY	SITE	SEASON	POPULATION	CURRENT ESTIMATE
Azerbaijan	Gizil Agach State Reserve (Golden Tree)	winter	WM	50-410
	Aggol National Park	winter	WM	33-230
	Arraz Water Reserve (Nachevan)	winter	WM	100
Bulgaria	Shabla Lake Complex	winter	F/WM	5-20
	Durankulak Lake	winter	F/WM	5-20
Estonia	Matsalu Bay region	spring staging	F	30-50
	Noarootsi Peninsula (and Silma Nature Reserve)	spring staging	F	30-50
Finland	Oulu region wetlands (especially Säärenperä)	spring staging	F	50
<i>Germany*</i>	-	-	-	-
Greece	Evros delta	winter & passage	F	54-75
	Lake Kerkini	winter & passage	F	35-69
Hungary	Hortobágy	winter & passage	F	22-82
Iran	Miankaleh Peninsula and Gorgan Bay	winter	WM	5--20
	Bujagh National Park	winter	WM	<5
	Aras River and Dam	winter	WM	>1000
<i>Iraq*</i>	-	-	-	-
Kazakhstan	Kulykol-Taldykol Lake System	passage	WM/F	>1000
	Koybagar-Tyntyugur Lake System	passage	WM/F	>1000
	Bolshoy Kak Lake	passage	WM/F	>1000
	Kazakh Zharkol, Kostanay province	passage	WM/F	>1000
	Russian Zharkol, Kostanay province	passage	WM/F	>1000
	Shagly-Teniz Lake, North Kazakhstan province	passage	WM/F	>1000
	Alva Lake, North Kazakhstan province	passage	WM/F	>1000
	Kamyshlovo Lake, North Kazakhstan province	passage	WM/F	>1000
	Zhaltyr Lake, North Kazakhstan province	passage	WM/F	>1000
	Balykty Lake, North Kazakhstan province	passage	WM/F	>1000
	Aksuat Lake, North Kazakhstan province	passage	WM/F	>1000
	Shalkar-Karashatau LAke, Aktobe province	passage	WM/F	>1000
	Shalkar Lake, Aktobe province	passage	WM/F	>1000
	Zharsor, Kostanay (51.36440; 62.81942)	passage	WM/F	>1000
	Aikya, Aktubinskaya (50.92418; 61.58656)	passage	WM/F	>1000

<i>Lithuania*</i>	-	-	-	-
Norway	Inner part of Porsanger fjord (includes Valdak Marshes)	non-breeding	F	60-90 ind
	Sirbma, Tana municipality, Finnmark county	spring migration	F	1--10
	Kvænangsbotn, Troms county	spring staging	F	1--10
	Iesjav'ri, Finnmark county	breeding	F	10--20 pairs
<i>Poland*</i>				
Romania	Danube Delta Biosphere Reserve and Razim Complex	winter & passage	WM/F	5-20
	Balta Ialomitei (island in Danube)	wintering	WM/F	5-20
	Iezeer Calarasi (near Srebarna)	wintering	WM/F	5-20
	Suhaia	wintering	WM/F	5-20
Russia	Dvuob'ye	passage	WM/F	20.000
	Lake Manych-Gudilo	passage	WM/F	2.000-10.000
	Foothills of Engane-Pe Ridge, the Polar Urals (includes Niya-Yu River valley)	breeding	WM	30-50 pairs
	Dyupkun Lake, Putorana Plateau	breeding	WM	unknown
<i>Syria*</i>	-	-	-	-
Turkey	Evros delta	winter	F	unknown
Turkmenistan	Kelif-Zeyit	winter	WM	250-400
	Durnaly	winter	WM	150-300
Ukraine	Syvash Bay	passage	WM/F	100-500
Uzbekistan	Amudarya river flood land	winter	WM	100-500
	Talimarjan water reservoir and adjoining territories	winter	WM	500-1000

**Range states have not yet designated sites to the list.*

Annex 3. – Additional Sites of Importance for the Lesser White-fronted Goose

This list includes sites identified in the first AEWA Single Species Action Plan for the Lesser White-fronted Goose (2008) as well as sites reported by range states to the AEWA Lesser White-fronted Goose International Working Group. Range states have, in addition, prioritized some sites for surveys with the aim to clarify their current importance for the species. These sites appear shaded. As with the list of Critical Sites in Annex 2, this list will also be continuously updated as new information becomes available. An up-to-date version can be found on the AEWA Lesser White-fronted Goose International Working Group website: <http://lesserwhitefrontedgoose.aewa.info>.

COUNTRY	SITE NAME	SEASON	MIN	MAX	MEAN	% POP	PROTECTED
Azerbaijan	Agrichay Reservoir	passage	40	70	55	<1%	unknown
	Lake Sarysu	winter	41	41	41	<1%	little/none
	Shirvan National Park	winter					
Bulgaria	Pyasachnik Reservoir	passage	3	3	3	<1%	unknown
Estonia	Väinameri	non-breeding	11	50	30	<1%	unknown
	Põhja-Liivimaa	passage	23	44	33	<1%	most
Finland	Viklinrimpi	passage	1	5	3	<1%	most
	Pori archipelago and wetlands	passage	1	1	1	<1%	unknown
	Alajoki	passage	2	2	2	<1%	unknown
Greece	Lake Mitrikou (Ismarida)	winter	20	20	20	<1%	whole
	Nestou delta and coastal lagoons	winter	26	26	26	<1%	most
	Lake Koronia - Volvi	winter	1	1	1	<1%	whole
	Porto Lagos, Lake Vistonis, and coastal lagoons (Lakes of Thrace)	winter	40	40	40	<1%	whole
Hungary	Hanság and its surroundings	passage, winter				<1%	most
	Lake Fertő and its surroundings	passage, winter	1	8	5	<1%	most
	Kis-Balaton, Balaton and Nagyberek	passage, winter	1	10	6	<1%	most
	Dinnyési-fertő	passage, winter	1	1	1	<1%	most
	Tata and its surroundings	passage, winter	1	4	3	<1%	most
	Alkaline puszta of Upper Kiskunság	passage, winter	1	4	3	<1%	most
	Sodic Lakes of Kiskunság	passage, winter	1	4	3	<1%	most
	Pusztaszeri Landscape Protected Area	passage, winter	1	18	10	<1%	most
	Kardoskúti Fehér-tó	passage, winter	1	4	3	<1%	most
Kis-Sárrét	passage, winter	1	7	4	<1%	most	

	Bihari-sfk	passage, winter	1	11	6	<1%	most
	Lake Tisza and its surroundings	passage, winter	1	3	2	<1%	most
Iran	Gandoman	winter	?	?	?	?	?
	Ghareh gheslagh	winter	?	?	?	?	?
	Shur Gol, Yadegarlu and Dorgeh Sangi lakes	winter	70	70	70	<1%	whole
	Shur Gol, Yadegarlu and Dorgeh Sangi lakes	passage	175	175	175	2%	whole
	Seyed Mohalli, Zarin Kola and Larim Sara	winter	359	359	359	3%	little/none
	Gomishan marshes and Turkoman steppes	winter	1773	1773	1773	16%	unknown
	Hilleh Protected Area	winter	21	37	29	<1%	whole
	Lake Maharlu	winter	40	102	71	<1%	little/none
	Dez river marshes and plains	winter	190	190	190	2%	whole
	Anzali Mordab complex	winter	32	32	32	<1%	whole
	Lake Alagol, Lake Ulmagol and Lake Ajigol	winter	150	150	150	1%	little/none
	Lake Bakhtegan, Lake Tashk and Kamjan marshes	winter	90	90	90	<1%	most
	Inchek Borun lake and marshes	winter	36	36	36	<1%	little/none
	Dasht-emoghan	winter			<5		
	South uromyieh lake	winter			5-20		
	Qareh Qeshlagh	winter			5-20		
	Fereydoun Kenar & Sorkh rud	winter			<5		
	Arjan & Parishan	winter			unknown		
	Horel-azim Wetland (border with Iraq)	winter			unknown		
	Shadegan Marsh	winter			<5		
Iraq	Haur Al Suwayqiyah	winter	70	70	70	<1%	little/none
	Dalmaj Marshes	winter					not
	Teeb Marshes	winter					not
Kazakhstan	Sulukol Lake	passage	360	360	360	3%	little/none
	Shoshkaly Lake System	passage	26	68	47	<1%	little/none
	Sankebay Lakes	passage	15	40	27	<1%	little/none
	Maliy Kak Lake	passage	5	34	19	<1%	little/none
	Kushmurun Lake	passage	74	170	122	1%	little/none

	Ashchykol and Barakkol Lakes	passage	8500	8500	8500	77%	little/none
	Kamyshovoe-Zhamankol Lakes	passage	50	506	278	3%	little/none
	Korgalzhyn State Nature Reserve	passage	40	40	40	<1%	whole
	Korgankol Lake	passage	200	200	200	2%	little/none
	Akzhan Lake	passage	36	36	36	<1%	little/none
	Shoindykol Lake, Kostanay province	passage					well
	Taiynsha Lake, North Kazakhstan province	passage					reserve
	Solenoe Lake, North Kazakhstan province	passage					
	Polovinnoe Lake, North Kazakhstan province	passage					
	Sorbalyk-Maibalyk Lake, North Kazakhstan province	passage					
Macedonia	Lake Dojran	winter	2	6	4	<1%	little/none
Norway	Varangerfjord	passage	60	60	60	<1%	little/none
Romania	Jijiei ÅŶi Miletinului fish-ponds	passage	30	46	38	<1%	unknown
	Defileul Inferior al MureÅŶului	passage	1	3	2	<1%	unknown
	BraÅful Borcea	non-breeding	127	127	127	1%	unknown
	Lake GÅflÅfÅfui	non-breeding	18	18	18	<1%	unknown
	Dunarea Veche -Bratul Macin						yes
	Strachina Lake						yes
	Tasaul Lakes						yes
	Techirghiol Lake						yes
	Fundata and Amara lakes						yes
	Macin-Niculitel						yes
	Black Sea						yes
	Maxineni						yes
	Pescaria Cefa - Radvani Forest						yes
	Balta Alba – Amara-Jirlau						yes
	Traianu Lake						yes
	Hasarlac Lake						yes
	Oltina Lake						yes
	Dunareni Lake						yes

	Bugeac Lake						yes
	Iortmac Lake						yes
	the Small Island of Braila						yes
	Amara Lake						yes
	Ianca Lake						yes
	Bistret Lake						yes
	Mostistea Lake						yes
	Ciocanesti Lake						yes
	Fundata Lake						yes
	Strachina Lake and the accumulation lakes from the Olt Valley						yes
Russia	Sviyago-Kubninskaya forest-steppe	passage	200	200	200	2%	little/none
	Berkubinski forest	passage	500	1000	750	7%	little/none
	Turali lakes	passage	100	100	100	<1%	little/none
	Unskaya bay	passage	200	200	200	2%	most
	Valley of Sysola river	passage	50	150	100	<1%	little/none
	Yeiski salt-lakes	non-breeding	500	500	500	5%	little/none
	Zolotarevskaya area	passage	1200	1200	1200	11%	little/none
	Middle reaches of Bolshaya Rogovaya river	breeding	30	30	30	<1%	little/none
	Dadynskiye lakes	passage	10	300	155	1%	little/none
	Kuloy river	passage	2000	3000	2500	23%	some
	Curonian (Courish) Bay	passage	20	20	20	<1%	little/none
	Kocherdytsky goose zakaznik	passage	50	300	175	2%	whole
	Kulaksay lowland	passage	200	350	275	3%	little/none
	Kazachka	passage	500	1000	750	7%	little/none
	Sondugski Reserve and its outskirts	passage	100	100	100	<1%	some
	Bulgarski	passage	10	200	105	<1%	whole
	Central Forest Biosphere Reserve and adjacent areas	passage	20	200	110	1%	some
	Floodplain of Cheptsya river	passage	30	30	30	<1%	little/none
	Shalkaro-Zhetykol'ski lake system	passage	500	1500	1000	9%	little/none
	Flood-plain of Algashka river	passage	85	200	142	1%	little/none

	Basins of the Schuchya and Khadytayakha rivers	breeding	15	100	57	2%	unknown
	Basins of the Schuchya and Khadytayakha rivers	non-breeding	20	2000	1010	9%	unknown
	Koporski Bay	passage	15	30	22	<1%	little/none
	Mouth of Samur river	passage	30	40	35	<1%	most
	River Chernaya	breeding	1	2	1	<1%	little/none
	Mouth of Svir river	passage	8	30	19	<1%	most
	Downstream of Ik river	passage	100	100	100	<1%	unknown
	Basins of the Schuchya and Khadytayakha rivers	winter	20	2000	1010	9%	unknown
	Inder'	winter	60	60	60	<1%	little/none
	Neman river Delta and the coast of the Curonian (Courish) Bay	passage	20	20	20	<1%	little/none
	Petrocrepost' Bay	passage	500	500	500	5%	little/none
	Kargopol' area	passage	1	1000	500	5%	little/none
	Karakulinskaya flood-plain	passage	25	30	27	<1%	little/none
	Delta of the River Don	passage	30	50	40	<1%	some
	Arski fish-ponds	passage	200	300	250	2%	little/none
	Schuch'i lakes	passage	20	180	100	<1%	some
	Lover Ob'	passage	400	600	500	5%	little/none
	Kolguev island	non-breeding	30	30	30	<1%	little/none
	Torna - Shoina watershed	passage	1500	1500	1500	14%	most
	Pinezhski meadow	passage	300	840	570	5%	little/none
	Flood-plain of Kotorosl' and Ust'e rivers	passage	43	43	43	<1%	little/none
	Floodplains of the Unzha river near Kologriv	passage	15	30	22	<1%	little/none
	Steppes in the vicinity of Kanavka village	passage	12	30	21	<1%	little/none
	Volochanka river basin, Taimyr Peninsula	breeding	150	300	225	2%	unknown
	Upper part of Bolshaya Rogovaya river basin, Bolshezemelskaya tundra	breeding	20	35	27	<1%	unknown
	Ob delta						
	Vinogradovo foodplain						yes
	Rostov nature reserve						yes
Syria	Al-Baath Lake	passage					

	Buhayrat al-Assad	passage					
	Sabkhat al-Jabbul	passage/winter					
	Euphrate River Valley	passage					
Turkey	Saros bay	winter	25	25	25	<1%	little/none
Turkmenistan	Turkmenbashy Bay	winter	0	465	52	<1%	whole
	South Cheleken Bay	winter	0	101	11	<1%	little/none
Ukraine	Kytaj lake	non-breeding	7	7	7	<1%	little/none
	Styr' river valley (Luchytsi village)	passage	40	140	90	<1%	little/none
	Yagorlyts'ka and Tendrivs'ka Bays	passage	50	1000	525	5%	whole
	Chauda	passage	580	580	580	5%	little/none
	Dnister delta	non-breeding	5	2000	1002	9%	little/none
	Sasyk lake	non-breeding	2	50	26	<1%	little/none
	Pivdennyj Bug river valley (Goloskiv village)	passage	20	70	45	<1%	little/none
Uzbekistan	Tudakul and Kuymazar Reservoirs	passage	8	51	29	<1%	little/none
	Karnabchul Steppe	winter	4	142	73	<1%	some
	Karakyr Lakes	winter	30	30	30	<1%	some

Annex 4. – Terms of Reference for the AEWA Lesser White-fronted Goose International Working Group

GOAL & PURPOSE (as defined in the *International Single Species Action Plan for the Lesser White-fronted Goose*)

- Restore the Lesser White-fronted Goose to a favourable conservation status, i.e. neither of the wild populations in the Agreement Area qualifies as threatened according to the IUCN Red List¹⁶.
- Increase the population size and stop the contraction of the species' range.

ROLE

The role of the AEWA Lesser White-fronted Goose International Working Group will be to:

- 1) coordinate and catalyse the implementation of the International Lesser White-fronted Goose Single Species Action Plan (SSAP) approved by the AEWA Meeting of the Parties;
- 2) act as a central advisory group;
- 3) stimulate and support Range States in the implementation of the SSAP; and
- 4) monitor, critically review and report on the implementation and the effectiveness of the SSAP.

SCOPE

The AEWA Lesser White-fronted Goose International Working Group will:

- set priorities for action and work to implement them;
- coordinate the overall international implementation;
- raise funds for implementation;
- assist Range States in producing national action plans;
- ensure regular and thorough monitoring of the species populations;
- stimulate and support scientific research and reviews necessary for conservation;
- promote the protection of the network of critical sites for the species;
- facilitate internal and external communication and exchange of scientific, technical, legal and other required information, including with other specialists and interested parties;
- assist with information in determination of the red list status and population size and trends of the species;
- regularly monitor the effectiveness of implementation of the SSAP, communicate new knowledge emerging from scientific research and reviews, and take appropriate action according to the findings;
- regularly report on the implementation of the SSAP to the AEWA Meeting of the Parties through the National Focal Points; and
- update the international SSAP in 2025 or as required.

MEMBERSHIP

The AEWA Lesser White-fronted Goose International Working Group will comprise (1) designated representatives of national state authorities in charge of the implementation of AEWA and (2) representatives of national expert and conservation organisations as invited to the national delegations by the state authorities from all major Range States.

Countries forming the working group: Azerbaijan, Bulgaria, Estonia, Finland, Germany, Greece, Hungary, Islamic Republic of Iran, Iraq, Kazakhstan, Lithuania, Norway, Poland, Romania, Russian Federation, Syrian Arab Republic, Turkey, Turkmenistan, Ukraine and Uzbekistan.

The Chair of the AEWA Lesser White-fronted Goose International Working Group may invite and admit international expert and conservation organisations as well as individual experts as observers to the Working Group, as necessary.

¹⁶ Western Main population exceeds 25,000 individuals and Fennoscandian population exceeds 1,000 individuals and neither population is declining

Officers

A Chairperson of the AEWA Lesser White-fronted Goose International Working Group will be elected amongst its members.

A full-time Coordinator post has, for the time being, been established at the AEWA Secretariat with the help of funds made available by Norway. In future other range states may wish to contribute to the costs of the Coordinator post. The Coordinator will be in charge of the day-to-day operations of the Working Group and shall act in close cooperation with the Chairperson and the AEWA Secretariat.

The designated representatives of national state authorities will act as National Focal Points for the SSAP and will be the main contact persons for the Chairperson and the Coordinator.

MEETINGS

The Working Group should aim to hold face-to-face meetings once every two years but no later than every three years. Other face-to-face meetings may be arranged as circumstances allow (e.g. back-to-back meetings with other international fora). Between meetings, business will be conducted electronically via the Working Group's website and list server.

REPORTING

A thorough report on the implementation of the SSAP will be produced according to a standard format with contributions from all Range States and submitted for inclusion into the general International Review on the Stage of Preparation and Implementation of Single Species Action Plans to the AEWA Meeting of the Parties. Reports shall also be prepared by each Range State to a format agreed by the Working Group and presented at each face-to-face meeting of the Working Group. These National Reports shall be submitted to the Coordinator bi-annually, three months prior to the date of the next meeting of the Working Group at the latest. Financial support for meeting attendance and for the implementation of the SSAP for eligible range states (according to AEWA MOP decisions) will be coupled with the timely submission of national reports. Other reports will be produced as required by the AEWA Technical Committee or the AEWA Secretariat.

FINANCING

The operations of the AEWA Lesser White-fronted Goose International Working Group, including the coordinator post, are to be financed primarily by its members and, if applicable, by its observers; the UNEP/AEWA Secretariat cannot commit regular financial support and may only provide such if possible. Funding for SSAP activities of the Working Group or its members is to be sought from various sources.