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ESTABLISHMENT OF FAVOURABLE REFERENCE VALUES FOR BARNACLE GEESE (*Branta leucopsis*) and GREYLAG GEESE (*Anser anser*)

BRIEFING DOCUMENT

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The 5th Meeting of the AEWA European Goose Management International Working Group is taking place remotely in an online conference format.

Establishment of Favourable Reference Values for Barnacle Geese *Branta leucopsis* and Greylag Geese *Anser anser*

Briefing document

This document summarises approaches proposed by the African-Eurasian Waterbirds Agreement (AEWA) Secretariat to establish Favourable Reference Values (FRVs) for two species of geese within the context of activities under its European Goose Management Platform (EGMP)[1].

This document does not necessarily reflect the position of the European Commission or other Parties. It is only meant to recall the context and facilitate the understanding of the two AEWA's papers.

The approaches described just apply to these species within the context of AEWA implementation only.

1. What are Favourable Reference Values?

A fundamental objective of international treaties on bird conservation (below) is to achieve and/or maintain the favourable conservation status of species. Favourable Reference Values are attributes, defined separately for each species, that help assess, at any point in time, whether the conservation status of that species is indeed favourable.

Values are separately established in relation to population size (*i.e.* how many birds there are); for range (where they occur); and for habitat (whether there is enough to support the species).

In relation to Barnacle and Greylag Geese under AEWA, FRVs are established at the scale of biogeographical populations (and sometimes for smaller scale units of management). They will be important references for future assessment of the conservation status of these two species.

2. Legal and policy background

The situation is complex as it involves interactions between four different legal frameworks, as well as being informed by guidance relating to the implementation of a fifth.

Legal frameworks

- **AEWA** established the EGMP through a decision of its sixth Meeting of Parties in 2015 as a "process to address sustainable use of goose populations and to provide for the resolution of human-goose conflicts." As a fundamental principle of the Agreement, Article II.1 requires that "Parties shall take co-ordinated measures to maintain migratory waterbird species in a favourable conservation status or to restore them to such a status."

[1] The references of the full papers are the following:
- Barnacle Goose : Revision of Doc. AEWA/EGMIWG/4.17/Rev.1 presented at the 4th Meeting of the AEWA EGM IWG on 18-20 June 2019 in Perth, Scotland, UK - dated 07/10/2019
- Greylag Goose: 2nd revision of Doc. AEWA/EGMIWG/4.16/Rev.1 presented at the 4th Meeting of the AEWA EGM IWG on 18-20 June 2019 in Perth, Scotland, UK - dated 04/11/2019

- AEWA adopts definitions of terms related to conservation status and its favourability established by Article I, subparagraphs 1(a) to (k), of the **Convention on Migratory Species** (CMS) - given in the Appendix below.

- For those AEWA Parties that are EU Member States, the **EU Directive on the conservation of wild birds** provides a legally binding framework for bird conservation and management.

- All relevant AEWA Parties are Member States of the Council of Europe, and so the species protection provisions of **Bern Convention on the conservation of European wildlife and natural habitats** are relevant.

- Guidance on establishing FRVs for non-avian species, and habitat types, have been established for use in relation to reporting under Article 17 of the **EU Habitats Directive**[2]. Parties involved in the EGMP have agreed to closely follow these standards in the absence of detailed established processes under AEWA or the Birds Directive. This approach is sensible because:
  (1) the Favourable Conservation Status (FCS) definition in the Habitats Directive very closely resembles the CMS definitions applied in the context of AEWA; and
  (2) most Range States already have experience applying the Habitats Directive FCS concept.

- The process is informed also by guidance from AEWA's Technical Committee on the interpretation of Favourable Conservation Status in the context of setting population targets for AEWA international species action and management plans[3].

Legal status of the two relevant species

- The two goose species have different legal status:
  - **Birds Directive.** Barnacle Geese are listed on Annex I (which triggers an obligation to designate SPAs for the species) and are not listed on Annex II (meaning that they are not to be hunted in any EU Member State). Greylag Geese however are not listed on Annex I but are included in Annex IIA meaning that they may be hunted in all EU Member States under the provisions of the Directive.
  - **AEWA.** Legal provisions vary according to population (rather than being determined at species scale as for Birds Directive) (Table 1). Under AEWA hunting of the Greylag Geese, and the Greenland and Russian populations of Barnacle Geese is possible.

    AEWA Parties adopted International Single Species Management Plans for the NW/SW European population of Greylag Geese[4], and for Barnacle Geese[5] in 2018 which establish high-level management objectives for the species.
  - **Bern Convention.** Barnacle, but not Greylag, Geese are listed on Appendix II of the Bern Convention which requires their strict protection.

[2] DG Environment 2017. Reporting under Article 17 of the Habitats Directive: explanatory notes and guidelines for the period 2013-2018. Brussels. *Referred to simply as EU Guidance elsewhere*

[3] AEWA Technical Committee. 2017. *Guidance on the interpretation of Favourable Conservation Status in the context of setting population targets for AEWA international species action and management plans*. Doc AEWA/BGMPWS 1.5.

[4] Powolny, T., Jensen, G.H., Nagy, S., Czajkowski, A., Fox, A.D., Lewis, M. & Madsen, J. (compilers) 2018. *AEWA International Single Species Management Plan for the Greylag Goose (*Anser anser*) - Northwest/Southwest European population.* AEWA Technical Series No. 71. Bonn, Germany.

[5] Jensen, G.H., Madsen, J., Nagy, S. & Lewis M. (compilers) 2018. AEWA International Single Species Management Plan for the Barnacle Goose (Branta leucopsis) - Russia/Germany & Netherlands population, East Greenland/Scotland & Ireland population, Svalbard/South-west Scotland population. AEWA Technical Series No. 70. Bonn, Germany.

3. About the species

Distribution and Range States

Populations of the two species are migratory (or partially migratory) and occur in multiple Range States. There are non-migratory components of some populations. For Barnacle Geese, all of the arctic breeding areas are outside the EU.

Three populations of Barnacle Geese and one of Greylag Geese are under consideration by EGMP and some of these are split into smaller Management Units:

Barnacle Goose

- E Greenland/Scotland & Ireland population (Range States – Greenland [Denmark], Iceland, UK, Ireland)
- Svalbard/SW Scotland population (Norway, UK)
- Russia/Germany & Netherlands population (Russia, Finland, Estonia, Sweden, Germany & Denmark, Netherlands & Belgium)
  For the purposes of the EGMP, three Management Units within this population are recognised:
  - Long-distance migratory birds breeding in arctic Russia
  - Baltic breeding birds
  - Non-migratory birds breeding on North Sea coasts

Greylag Goose

- NW/SW European population (Finland, Norway, Sweden, Denmark, Germany, Netherlands, Belgium, France, Spain & Portugal)
  For the purposes of the EGMP, two Management Units within this population are recognised:
  - Management Unit 1: migratory birds breeding in Norway, Finland, Sweden and Denmark, and additionally wintering in Germany, Netherlands, Belgium, France, Spain and Portugal
  - Management Unit 2: non-migratory birds breeding in Germany, Netherlands, Belgium and France

Population and range growth

The **Barnacle Goose** had declined in the first part of the 20th century, but its populations, and those of Greylag Goose, have increased significantly in numbers since the 1950s. There have been increases in both species since the adoption of the Birds Directive in 1979 (and again since AEWA entered into force in 1999) (Table 1).

The formerly exclusively arctic-breeding Barnacle Goose of the Russia/Germany & Netherlands population has now expanded its range to establish breeding colonies in temperate countries bordering the Baltic and southern North Sea. The Svalbard population has increased significantly in numbers but not in wintering range, whilst the Greenland population expanded its range to breed in Iceland in the 1980s, and possibly also on the Faeroe Islands.

The NW/SW European population of **Greylag Goose** breeds mainly in the Netherlands, Germany, Sweden, Denmark and Norway. During the autumn migration, northern breeding birds migrate south across Europe to the Low Countries, France, Spain and Portugal. The population has increased from c. 30,000 individuals

in the mid-1960s to a currently estimate total of 900,000-1,200,000. A number of informal reintroductions played an important role in this population expansion.

Wintering numbers have increased in all Range States, particularly in Germany, Denmark, Sweden, France and the Netherlands and to a lesser extent in Spain (where occurrence is dependent on annual environmental conditions). Numbers are now significantly greater than at the adoption of the Birds Directive in 1979 (also since AEWA came into force in 1999; Table 1). Understanding the population is significantly complicated by the growth in numbers and range of resident Greylag Geese now breeding in many European countries, with which migratory birds significantly mix in the non-breeding season.

4. Different types of reference values

There are a number of different types of reference value, and their relationship to each other is shown in in Figure 1.

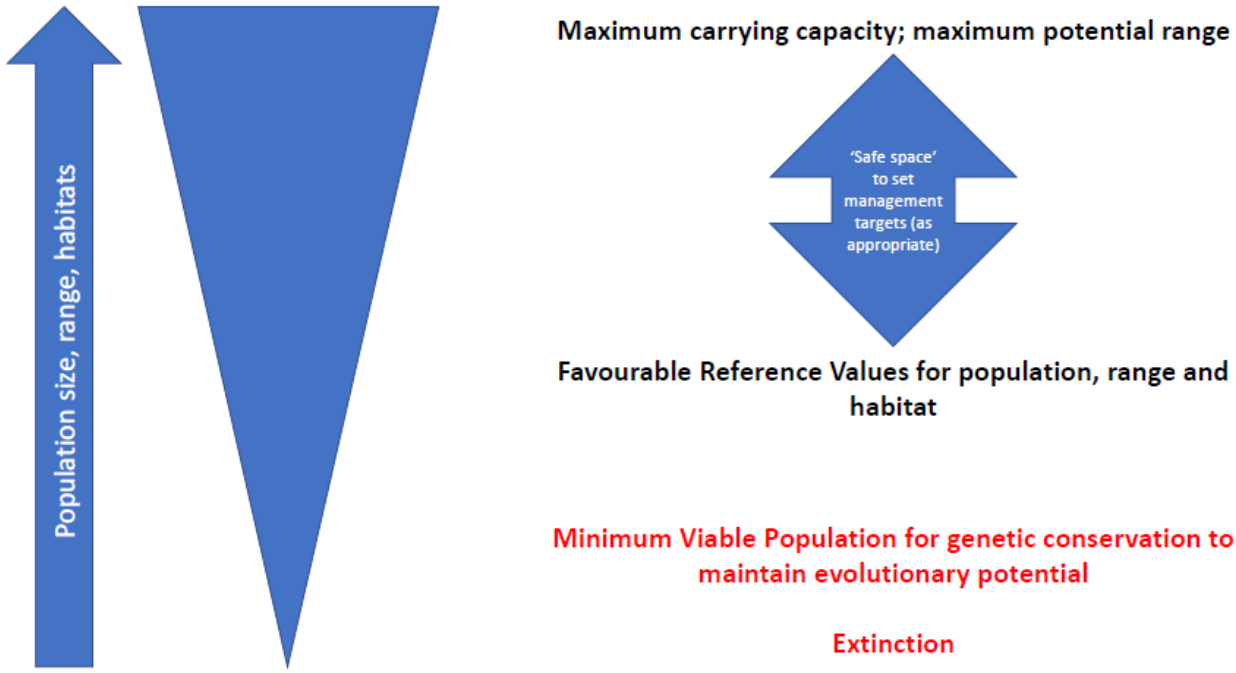

Figure 1. The conceptual relationship between different types of reference values. If it is appropriate to set management targets for a species, these should always be larger than Favourable Reference Values.

Minimum Viable Populations to maintain evolutionary potential

The need for sufficient individuals in a population to:

1. avoid the risk of genetic inbreeding to maintain evolutionary potential; and also
2. to buffer against the effects of random environmental effects.

A generalised guideline is that a genetic Minimum Viable Population (MVP) is equal to an effective population size of 500 mature individuals[6]. Allowing for non-breeding birds within Barnacle Goose populations, an effective population size of 500 is the equivalent to a counted population of 1,426 individuals.

Population modelling of life-history statistics allows the calculation of risk from random environmental effects (for example, continuous runs of years with no breeding) such that the population declines below the genetic Minimum Viable Population. For the three Barnacle Geese populations, numbers that are sufficient to sustain the population above the genetic MVP with 99% probability are relatively small. For the Greenland population this is 5,026; for the Svalbard population 2,626; and for the Russian/Germany & Netherlands population 4,526).

Legal reference values

To comply with respective treaty obligations, in principle, population sizes cannot be lower than they were when treaties came into force.

- The legal reference values for the Birds Directive are the size of populations in c. 1980 (called Directive Values - DV);
- For AEWA legal reference values are those in c. 2000 (called Agreement Values).

Table 1 gives relevant values. The status of a species when the Directive or the Agreement was adopted (*i.e.* the DV or AV) was not necessarily favourable at that time and therefore legal reference values are often lower than FRVs. Especially for those species that were listed as in need of special conservation measures (such as site-designation) it can be assumed that legislators at the time considered them as in a non-favourable status.

Favourable Reference Values

Following EU Guidance, and in the context of the AEWA/CMS definition of Favourable Conservation Status (FCS) (Appendix), three FRVs need to be considered within their historic contexts[7]:

- Favourable Reference Population (FRP);
- Favourable Reference Range (FRR); and
- Favourable Reference Habitat (FRH)[8].

The FRV for a population is always larger than the MVP for demographic and genetic viability. Even though these FRVs are important elements in establishing the status of a species, there are also other elements to be taken into account such as trends in range and population, population structure, habitat quality, as well as future prospects (see EU Guidance).

FRVs are often interdependent: the values for population size should be considered in the light of values for range and habitat. The EU Guidance therefore suggests an iterative process. On the other hand, there are situations where values may need to be considered independently. For example, for colonial species it does not follow that a change in population numbers leads to a proportionate change in range. Each FRV element thus provides a different way of assessing conservation status. There is always a need to use a 'case-by-case' approach.

[6] Cf. EU Guidance 2017, p.119

[7] This also relates to the CMS requirement (Article 1c(4)) that status will be considered favourable when "the distribution and abundance of the migratory species approach historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management;"

[8] Whilst not part of FCS assessment for species under EU Guidance, habitat is an element of the AEWA/CMS definition of FCS. See below

Carrying capacity

Both the EC and the AEWA TC guidelines recognise that carrying capacity (as shown in Figure 1) can inform setting FRVs. However, it is not a requirement to set FRVs at carrying capacity if a population is otherwise a long-term viable component of its natural habitat.

5. Establishing Favourable Reference Values

The process: what scale?

EU Guidance indicates that for migratory populations, with individuals showing large cyclic, directed movements, FRVs are normally set through cooperation between Member States where the species normally occurs at given periods of the year. Therefore, the most appropriate approach to define FRVs for Barnacle Goose populations is at international scale and collaboratively between Range States.

For Greylag Geese (some population components of which are either partially migratory or non-migratory), AEWA Parties have agreed that FRVs will be defined nationally by Range States for the breeding season, and that non-breeding season values will be derived from these values. This follows established processes.

The process: what information?

EU Guidance proposes two different approaches to establish FRVs: either an approach based on historic reference levels (comparing the current situation to a more favourable historical situation, *i.e.* a 'reference based' approach), or an approach based on modelled information for the population, *i.e.* a 'population based' approach. In practice, for most species, iteration between the two approaches can be used based on best available information.

Owing to general lack of compiled historic information for the three FRV elements across the populations and Management Units, a broadly population-based approach has been used for the two geese species informed by existing historic information as appropriate.

In calculating individual FRVs, using different approaches and comparing these increases the robustness of conclusions.

Assessing Favourable Reference Population

Genetic and demographic Minimum Viable Population sizes

EU Guidance requires consideration of genetic and demographic Minimum Viable Population size as a first step in a population-based approach. As outlined above and in background documents, these values are all very significantly smaller than respective legal reference values for the two species of geese.

Selecting FRP values

EU Guidance[9] indicates that "if MVP is much smaller than the size of the population at the date of entry into force of the Directive, then the FRP should be equal to the latter value". This approach has been adopted, although the Agreement Value – a larger and more contemporary value – has been used instead of the Directive Value.

What is an ecologically flourishing population?

[9] EU Guidance 2017, p.121-122

In establishing FRVs at levels which represent ecologically flourishing/functional populations *i.e.* values that express more than a minimal status, the following attributes[10] have been found to be helpful as a guide. Successfully conserved species will:

(a) be self-sustaining demographically and ecologically;

(b) be genetically robust;

(c) have healthy populations;

(d) have representative populations distributed across the historical range in ecologically representative settings;

(e) have replicate populations within each ecological setting; and

(f) be resilient across their range.

In considering the status of a population at historical points in time (*i.e.* Directive and Agreement Values), it is helpful to consider whether the population was then ecologically flourishing, as informed by the above attributes.

Assessing Favourable Reference Range

EU Guidance, and AEWA/CMS definitions (Appendix), makes clear that *range* is different from (and much larger than) the *distribution* of a species. Range encompasses the general area occupied by the species, not the fine scale of distribution of individual sites used. Range is accordingly defined at a wide spatial scale, especially for mobile species like geese.

In the case of the two geese species, FRR values are suggested to be defined by Range States, for naturally occurring populations, as the extent of recently assessed range (since there has been no range losses over recent decades).

Assessing Favourable Reference Habitat

In the case of the two species, understanding of the sufficiency of habitat was logically derived from consideration of trends in population size and range.

Whilst habitat extent values do not need to be established, there needs to be an assessment as to whether there is enough habitat to support the FRP.

Whilst Barnacle Geese are traditionally specialist grazers of coastal saltmarshes, as populations have increased, they have increasingly adapted to feeding on inland, intensively managed, grasslands. Additionally, a range of factors have caused local declines in saltmarsh extent and condition, locally exacerbating this trend away from natural habitats. Thus, assessments of habitat need to consider the scope for restoration of natural habitats - although given the species' demonstrated ecological adaptability this will not resolve agricultural conflicts in itself.

Proposed Values

Based on the assessment process outlined in the EU Guidance, and summarised above, the following reference values are proposed (all summarised in Table 2).

[10] Redford, K.H., Amato, G., Baillie, J., Beldomenico, P., Bennett, E.L., Clum, N., Cook, R., Fonseca, G., Hedges, S., Launay, F. & Lieberman, S. 2011. What does it mean to successfully conserve a (vertebrate) species? *BioScience* 61(1): 39-48.

Barnacle Goose

1. E Greenland/Scotland & Ireland population

Favourable Reference Population

As explained above, defined at the Agreement Value level (54,000 individuals) since the population was then already ecologically flourishing (above) but was then dependent on artificial habitats to a lesser extent than at present thus representing more limited risk to other habitats than at current levels.

Favourable Reference Range

Proposed to be set at the extent as assessed for the period 2013 – 2018 because this is sufficient to ensure the long-term viability of an ecologically flourishing population and there is no evidence of past range contractions.

Favourable Reference Habitat

Overall growth of the population is continuing, indicating that the available habitat is sufficient to support the population at the current level and possibly beyond.

2. Svalbard/SW Scotland population

Favourable Reference Population

The population (currently of 41,700) winters primarily on one SPA[11] on the Scotland/England border. A FRP of 25,000 individuals is proposed based on the lower threshold for listing within Column B1[12] of AEWA's Action Plan. This is because decline below this value would trigger a significant change the legal status of the population under the requirements of the Action Plan, namely legal protection from hunting. This value is much higher than both genetic and demographic MVPs and the Directive Values.

Favourable Reference Range

The breeding, staging and wintering range as assessed for the period 2013 – 2018 is sufficient to support the population at the current level, which is already higher than the proposed FRP. The range in all three seasons shows no deficiency that would jeopardise the long-term viability of the population. Therefore, it is proposed to define the Favourable Reference Range at the level of the 2013 – 2018 assessment period.

Favourable Reference Habitat

Overall growth of the population is continuing, indicating that the available habitat is sufficient to support the population at the current level and possibly beyond.

3. Russia/Germany & Netherlands population

The population consists of three Management Units:

- long-distance migratory geese breeding in Russian arctic;
- short-distance migrants breeding in the Baltic; and
- resident geese breeding around the coasts of the southern North Sea.

[11] The population level for the Upper Solway Firth SPA was 12,300 at classification in November 1992.

[12] Category B1: "*Population numbering between 25,000 and around 100,000 individuals and which do not fulfil the conditions in respect of column A*" (cf. Table 1 of the AEWA's Action Plan)

The temperate breeding populations are partly introduced and partly established naturally. All three Management Units winter in Germany and the Netherlands, and increasingly in Belgium, Denmark and Sweden where they mix.

Favourable Reference Population

It is proposed to define the Favourable Reference Population for the entire non-breeding population at the Agreement Value of 380,000 individuals (see above) because the population was already ecologically flourishing at that level. It had already reached the carrying capacity of the Baltic staging areas but was dependent to a lesser extent on artificial habitats than currently. It then represented also more limited risk to other habitats, using semi-natural habitats to a greater extent than at current levels. This value is much higher than both the MVP and the Directive Value.

For the Baltic Management Unit, it is recommended that the breeding FRP be defined (above Agreement Values and MVPs) as the sum of the nationally established values in those Range States where it breeds naturally.

For the North Sea Management Unit, it is recommended that the breeding FRP be defined (greater than Agreement Values and MVPs) as the sum of the nationally established values in those Range States where it breeds naturally.

The FRP for the Russian Management Unit will be obtained by deducting the FRPs of the other two Management Units from the flyway FRP of 380,000 individuals[13].

Favourable Reference Range

It is suggested to define the Favourable Reference Range for the Russian Management Unit at the level of the 2013 – 2018 reporting period for both the breeding and passage seasons, as there is no sign of deficiencies in the range at the level of the FRP.

For the Baltic Management Unit, the FRR should be defined collectively by the Range States with naturally occurring breeding populations taking into account the range requirement of the FRP.

For the North Sea Management Unit, the FRR should be defined nationally by the Range States with naturally occurring breeding populations taking into account the range requirement of the FRP.

Favourable Reference Habitat

The continued exponential growth of both the Russian and North Sea Management Units shows that there is sufficient habitat even beyond current population levels. Although population levels since the mid-1990s have exceeded the carrying capacity of the staging areas in the Baltic, this has not limited the growth of the population, since Barnacle Geese managed to adapt to this situation - first by using a larger area in the Baltic on migration, and then by staging for a shorter period in the region and staying longer on the wintering grounds.

The further growth of the Swedish coastal breeding population seems to be limited by the availability of suitable habitats that triggered the expansion of the range within Sweden and to other countries. However, sufficient habitat is available to support at least the current population size.

The FRH values for the Baltic and North Sea Management Units will be defined at national level by the Range States where it occurs naturally as a breeding species.

[13] Equivalent to 136,700 pairs using a breeding to non-breeding conversion factor of 2.78 derived with EGMP data

All wintering Range States have been asked to provide information on the FRVs for Barnacle Goose range and habitat for the non-breeding season though a consultation process.

Greylag Goose

NW/SW European population

It is proposed that all three Favourable Reference Values for the breeding season (for population, range and habitat), as well as the FRVs for range and habitat for the non-breeding season be established nationally by Range States, and then communicated to the AEWA Secretariat.

The Favourable Reference Population for the non-breeding seasons will be derived from the national breeding Favourable Reference Populations by the EGMP Data Centre using appropriate conversion factors.

This approach allows aggregating Favourable Reference Values from the national level, to the Management Unit, and then to the flyway population levels as indicated in Figure 2.

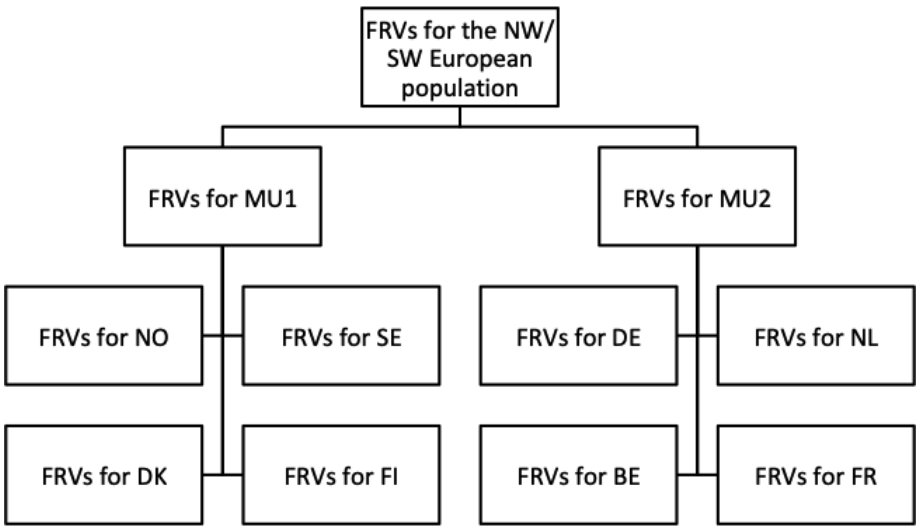

Figure 2. Hierarchical aggregation of FRVs for the breeding seasons for the NW/SW European Greylag Goose population.

As outlined above, whilst exact extent habitat values do not need to be established, there needs to be an assessment as to whether there is enough habitat to support the Favourable Reference Population.

Recommended approaches are summarised in Table 2.

Table 1. Legal and population status of Barnacle and Greylag Geese

	Migratory status	Birds Directive Annex I	Birds Directive Annex II	AEWA Action Plan Table 1 status[14]	1950s population	Directive Value (1980)	Agreement Value (2000)	Current Value (2010s)	Demographic MVP
Barnacle Geese		✓							
E Greenland/SW Scotland	Migratory	✓		B1	8,277	33,815	53,823	72,162	5,026
Svalbard/SW Scotland	Migratory	✓		A3a	1,350	9,050	23,000	41,700	2,626
Russia/Germany & Netherlands	Migratory, partially migratory and resident	✓		C1	10,000	47,919	380,000	1,200,000	4,526
Greylag Goose			✓						
NW/SW Europe	Migratory, partially migratory and resident		✓	C1	<30,000[15]	120,000[16]	400,000	900,000-1,200,000	-

[14] For species listed in Columns B and C hunting is possible

[15] mid-1960s

[16] mid-1980s

Table 2. Summary of approaches to determine Favourable Reference Values for Barnacle and Greylag Goose populations

	Favourable Reference Population	Favourable Reference Range	Favourable Reference Habitat
BARNACLE GOOSE			
Greenland population	*4.2.1*[17] Agreement Value = 54,000 individuals	*4.2.2* Current Value (2013 – 2018 assessment period)	*4.2.3* No value established as such but needs assessment as to whether habitat extent is enough to support the FRP[18]
Svalbard population	*5.2.1* 25,000 individuals – lower threshold of criterion for listing in Colum B1 of AEWA' Action Plan (Agreement Value = 23,000 individuals, Directive Value = 9,050 individuals).	*5.2.2* Current Value (2013 – 2018 assessment period)	*5.2.3* No value established as such but needs assessment as to whether habitat extent is enough to support the FRP[18]
RU, DE & NL population			
WINTER			
Flyway	*6.2.1.1* Agreement Value = 380,00 individuals	*6.2.2.5* Current Value (2013 – 2018 assessment period)	*6.2.3.4* No value established as such but needs assessment as to whether habitat extent is enough to support the FRP[18]
BREEDING			
Flyway	136,700 pairs (*i.e.* winter population/2.78)	*6.2.2.4* Breeding = Current Value (2013 – 2018 assessment period) [= sum of three MUs] Non-breeding (including both passage and wintering) = FRR for Russian MU	No value established as such but needs assessment for the three MUs combined (based on national assessments) as to whether habitat extent is enough to support the FRP[18]

[17] Numbers relate to section numbering of [Doc. AEWA/EGMIWG/4.17/Rev.1 – UPDATE TO FINAL IWG 5 DOC REF]

[18] With the FRP at the Agreement Value (which is less than the current population size), it follows that there is current sufficient habitat to support the established FRP

	Favourable Reference Population	Favourable Reference Range	Favourable Reference Habitat
Russian Management Unit	*6.2.1.4* Flyway FRP (= Agreement Value) minus Baltic and North Sea MUs	*6.2.2.1* Current Values (2013 – 2018 assessment period) for both breeding, and non-breeding (*i.e.* passage and wintering combined) separately	*6.2.3.1* No value established as such but needs national assessment as to whether habitat extent is enough to support the FRP[18]
Baltic Management Unit	*6.2.1.2* Sum of nationally defined FRPs (>Agreement Value) for those Range States that consider they have naturally occurring populations only	*6.2.2.2* Breeding = Current Value (2013 – 2018 assessment period) {excluding introductions} Non-breeding = Current Value (2013 – 2018 assessment period) in relevant parts of the range	*6.2.3.2* No value established as such but needs national assessment as to whether habitat extent is enough to support the FRP[18]
North Sea Management Unit (non-migratory)	*6.2.1.3* Sum of national values (>Agreement Value) defined by those Range States that consider they have naturally occurring populations {excluding introductions}	*6.2.2.3* Breeding = Current Value (2013 – 2018) {excluding introductions} Sum of national values defined by those Range States that consider they have naturally occurring populations {excluding introductions}	*6.2.3.3* No value established as such but needs national assessment as to whether habitat extent is enough to support the FRP[18]

	Favourable Reference Population	Favourable Reference Range	Favourable Reference Habitat
GREYLAG GOOSE			
NW/SW European population			
NON-BREEDING (WINTER & PASSAGE)			
Management Unit 1	To be derived from national breeding season FRP values using appropriate conversion factors (converting breeding numbers in MU1 into autumn migration and mid-winter numbers)	Sum of nationally defined values representing the situation in the 2013-2018 assessment period	No value established as such but needs national assessment as to whether habitat extent is enough to support the FRP[18]
Management Unit 2	To be derived from national breeding season FRP values using appropriate conversion factors	Sum of nationally defined values representing the situation in the 2013-2018 assessment period	No value established as such but needs national assessment as to whether habitat extent is enough to support the FRP[18]
BREEDING			
Management Unit 1	Sum of nationally defined values from relevant breeding Range States, as long as these are greater than Agreement Values[20], otherwise Agreement Values will be used	Sum of nationally defined values representing the situation in the 2013-2018 assessment period	No value established as such but needs national assessment as to whether habitat extent is enough to support the FRP[18]
Management Unit 2	Sum of nationally defined values from relevant breeding Range States, as long as these are greater than Agreement Values[20], otherwise Agreement Values will be used	Sum of nationally defined values representing the situation in the 2013-2018 assessment period	No value established as such but needs national assessment as to whether habitat extent is enough to support the FRP[18]

Appendix. Article I, subparagraphs 1(c, d, f and g), of the Convention on Migratory Species

1. For the purpose of this Convention:

…

c) "Conservation status" will be taken as "favourable" when:

(1) population dynamics data indicate that the migratory species is maintaining itself on a long-term basis as a viable component of its ecosystems;

(2) the range of the migratory species is neither currently being reduced, nor is likely to be reduced, on a long-term basis;

(3) there is, and will be in the foreseeable future, sufficient habitat to maintain the population of the migratory species on a long-term basis; and

(4) the distribution and abundance of the migratory species approach historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management;

d) "Conservation status" will be taken as "unfavourable" if any of the conditions set out in sub-paragraph (c) of this paragraph is not met;

…

f) "Range" means all the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route;

g) "Habitat" means any area in the range of a migratory species which contains suitable living conditions for that species;