AEWA EUROPEAN GOOSE MANAGEMENT PLATFORM

4th MEETING OF THE
AEWA EUROPEAN GOOSE MANAGEMENT
INTERNATIONAL WORKING GROUP

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AEWA European Goose
Management Platform

PROCESS FOR THE DEVELOPMENT OF THE
ADAPTIVE FLYWAY MANAGEMENT PROGRAMME FOR THE RUSSIA/GERMANY
& NETHERLANDS POPULATION OF THE BARNACLE GOOSE

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The 4th Meeting of the AEWA European Goose Management International Working Group is being hosted by Scottish Natural Heritage.

1. Background

The International Single Species Management Plan (ISSMP) for the Barnacle Goose (*Branta leucopsis*) was developed according to Paragraph 4.3.4 of the AEWA Action Plan, which provides for developing ISSMPs for populations which cause significant damage, in particular, to crops and fisheries. In addition, it responds to AEWA Resolution 6.4, which requested the establishment of a multi-species goose management platform and process to address the sustainable use of goose populations and to provide for the resolution of human-goose conflicts, targeting as a matter of priority Barnacle and Greylag Geese.

The ISSMP for the Barnacle Goose was adopted at the 7th Session of the Meeting of the Parties to AEWA (MOP7), 4-8 December 2018 in Durban, South Africa, following various stakeholder workshops and extensive consultation with the Range States and relevant stakeholders.

The ISSMP provides a mandate for developing population-specific Adaptive Flyway Management Programmes (AFMPs) for each of the three populations (Russia/Germany & Netherlands; East Greenland/Scotland & Ireland, Svalbard/South-west Scotland) of Barnacle Goose, recognising that the populations have a different status on Table 1 of AEWA and that there are regional differences in migratory behaviour and the human-wildlife conflicts involved. These AFMPs shall be formally adopted by the European Goose Management International Working Group (EGM IWG) and then reviewed periodically.

This document focuses on the development of the AFMP for the Russia/Germany & Netherlands population. The development of an AFMP for the Svalbard/South-west Scotland population is currently under discussion with the two main Range States (Norway and Scotland). Similarly, the development of the AFMP for the East Greenland/Scotland & Ireland population will require prior discussions with the main Range States. The Secretariat will report back at the EGM IWG4 on the outcomes of these discussions.

2. Purpose of the AFMPs

The purpose of the AFMPs is to establish an agreement amongst Range States on the implementation of those activities in the Barnacle Goose ISSMP, that require coordination at the population and/or Management Unit (MU) level.

Specifically, each AFMP will address the following activity:

1) Assess periodically and report to the EGM IWG the cumulative impact of derogations and hunting[1] on:

   a) The development of the population;

   b) The likelihood of serious damage to agriculture;

   c) Risk to air safety;

   d) Risk to other flora and fauna (including the Arctic ecosystems); and

   e) The non-lethal measures taken to prevent damage/risk, as well as the effectiveness of these.

In addition, the AFMPs will assist Range States in coordinating the implementation of their derogation schemes and will therefore contain information that is relevant for assessing the need for derogations at Range State level[2].

The implementation of further activities agreed in the Barnacle Goose ISSMP will be elaborated in the MU-specific workplans within each AFMP, following the same principle of the non-AHM workplan for the Taiga Bean Goose.

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[1] Hunting in Range States where the species can be legally hunted and derogation from the provisions of the EU Birds Directive, AEWA or the Bern Convention is not required.

[2] See Box 1 of the Barnacle Goose ISSMP.

Moreover, it should be noted that Range States remain responsible for their derogation measures and for national planning and implementation within the framework of the ISSMP.

According to the Barnacle Goose ISSMP, the following items shall be included as part of the AFMPs:

1) Definition of MUs, if necessary;

2) Definition of Favourable Reference Values (FRVs) for the population/MU;

3) Population/MU specific analysis of [3]:

   a) Characterisation of the spatial and temporal extent and trends of damage to agriculture and of risks to human health and air safety, as well as to other flora and fauna that can be attributed to the MU in question, including predicted future changes in these;

   b) Description of the methods applied in the past assessments [*for the need for derogations*] in each country and recommendations for the development of future guidelines for assessments;

   c) Description of the methods applied or tested to prevent damages and to reduce risks, their effectiveness and sufficiency to tackle the problem;

   d) Understanding of the link between population level and damages or risk;

   e) Each AFMP shall also contain information on habitat conservation measures, including designation of Special Protection Areas (SPAs) under Article 4(2) of the Birds Directive:

      i) List of SPAs and other protected areas designated for the Barnacle Goose;

      ii) Management of the species and the damage inside and outside SPA;

      iii) Tackling damage prevention inside and outside SPAs (accommodation areas, derogations, etc.).

4) Protocols to assess the cumulative impact of all off-take (including both legal hunting and derogations);

5) Workplans for the ISSMP actions relevant to the population/MUs.

3. Proposed Outline of an AFMP for the Barnacle Goose

Main body of the AFMP:

1. Introduction

Description on the purpose and scope of the AFMP.

2. Definition of Management Units (MUs)

This section will include the MUs in the Russia/Germany & Netherlands Population as agreed at the EGM IWG4 (see document AEWA/EGMIWG/4.15)

3. Definition of Favourable Reference Values (FRVs)

The FRVs for the Barnacle Goose will be included in this section, as agreed at the EGM IWG4 (Doc. AEWA/EGMIWG/4.17/Rev.1).

4. Cumulative impact of derogations and legal hunting

Assessment of the cumulative impact of derogations and hunting[1] on the development of the population, the likelihood of serious damage to agriculture and risk to air safety and to other flora and fauna (including the Arctic ecosystems) and the non-lethal measures taken to prevent damage/risk,

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[3] See Box 1 of the Barnacle Goose ISSMP

as well as the effectiveness of these. If necessary, this section will propose a coordination of the derogation measures between Range States to avoid risk to the population and to enhance effectiveness of the measures.

5. Monitoring indicators and programmes

Clear and effective monitoring indicators and programmes are identified to measure that the management objectives are met.

6. Protocols for the iterative phase (decision making, monitoring and assessment)

Management actions are evaluated systematically and adapted accordingly for improved management. The detailed protocols will be added as an Annex to the AFMP.

The following sections will be added as Annexes to the AFMP:

Annex 1. MU-specific workplans

Annual MU-specific workplans will be included and reviewed by the EGM IWG at their annual meetings. Workplans will include priority activities identified in the ISSMP, as well as other activities agreed by the EGM IWG at their annual meetings.

Annex 2. Box 1 of the ISSMP for the Barnacle Goose

a. Characterisation of the spatial and temporal extent and trends of damage to agriculture and of risks to human health and air safety as well as to other flora and fauna that can be attributed to the population/MU in question, including predicted future changes in these;

b. A description of the methods applied in the past assessments [*for the need for derogations*] for each country and recommendations for the development of future guidelines for assessments;

c. Description of the methods applied or tested to prevent damages and to reduce risks, their effectiveness and sufficiency to tackle the problem;

d. Understanding of the link between population level and damages or risk;

e. List of SPAs and other protected areas designated for the Barnacle Goose;

f. Management of the species and the damage inside and outside SPAs;

g. Tackling damage prevention inside and outside SPAs (accommodation areas, derogations, etc.).

Annex 3. Population Models

This section will include the Barnacle Goose population models to assess the cumulative impact of derogations and hunting[1] that will be prepared by the Data Centre, to inform decisions.

Annex 4. Impact Models

This section will include models that will assess the predicted outcomes of defined management actions (e.g. effect of derogations) on the fundamental objectives set in the ISSMP.

Annex 5. Protocols for the iterative phase (decision making, monitoring and assessment)

Protocols for the iterative phase will be presented in this section, in order to systematically evaluate management actions and adapt them accordingly for improved management.

4. Provisional[4] Steps and Timeline for the Development of the AFMP for the Russia/Germany & Netherlands Population

The development of the AFMP requires a number of steps that are highly dependent on the availability of funding, human resources and time, to provide a transparent management process that is informed by robust science.

The timeline below indicates an approximate timeframe, in which various elements of the AFMP for the Russia/Germany & Netherlands population can realistically be delivered, subject to the availability of resources.
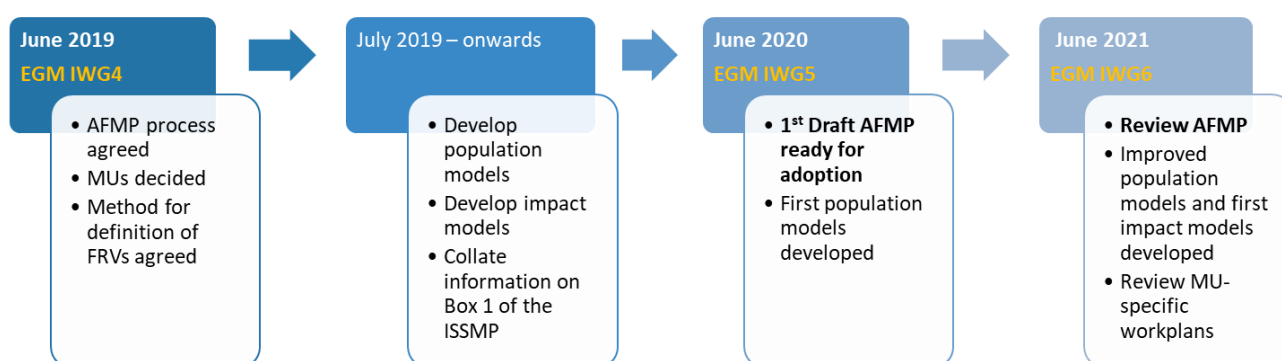
June 2019
EGM IWG4
- AFMP process agreed
- MUs decided
- Method for definition of FRVs agreed

July 2019 – onwards
- Develop population models
- Develop impact models
- Collate information on Box 1 of the ISSMP

June 2020
EGM IWG5
- **1st Draft AFMP ready for adoption**
- First population models developed

June 2021
EGM IWG6
- **Review AFMP**
- Improved population models and first impact models developed
- Review MU-specific workplans

Figure 1. Provisional timeline for the development of the AFMP

At the EGM IWG4 in June 2019 Range States are expected to agree on the proposed process for the development of the AFMPs and on the proposed MUs for the Russia/Germany & Netherlands population of the Barnacle Goose, presented in document AEWA/EGMIWG/4.15.

At the same time, Range States are also expected to agree on the method to define FRVs for the Barnacle Goose (see document AEWA/EGMIWG/4.17/Rev.1). The FRVs will be included in the AFMP and presented at the EGM IWG5 in June 2020.

From July 2019 onwards, the International Modelling Consortium will be working on the development of population models. During the 2nd Meeting of the International Modelling Consortium, which took place in Kalø, Denmark, on 21-22 March 2019 it was suggested that the Dutch group (SOVON, Wageningen University, NIOO) would develop the first population models for the Russia/Germany & Netherlands population in collaboration with the EGMP Data Centre. Once developed, the first set of population models will be presented to the EGM IWG5 in June 2020. The models will be further developed, improved and refined. However, impact models still have to be developed and are dependent on additional funding.

Moreover, the EGMP Data Centre will collate the information from the Range States needed concerning damage and site protection (Box 1 of the Barnacle Goose ISSMP) with input from the International Modelling Consortium and the EGMP Agriculture Task Force, as necessary. However, data on risks to air safety and other flora and fauna are currently not collated and assessed for the whole population and will require additional funding. Annex 1 of this document provides a justification and description of the need of additional capacity in the EGMP Data Centre to accomplish these tasks within the indicated timeline.

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[4] The timeline for the development of the AFMP is subject to the timely availability of data, funding and human resources.

Subject to the availability of resources a first draft of the AFMP for the Russian/Netherlands & Germany Population of the Barnacle Goose, including results of the first models and the MU-specific workplans, is expected to be ready for adoption at the 5th Meeting of the European Goose Management International Working Group (EGM IWG5) in June 2020.

Following June 2020, the AFMP, including the models and MU-specific workplans, will be reviewed for EGM IWG6 in June 2021.

The following resources are required to ensure the timely delivery of each step in the process:

Table 1. Key decisions and resources needed for the development of the Barnacle Goose AFMP (Russia/Germany & Netherlands population)

Decision / activity	Responsibility	Extra resources needed	Timeframe for decision or funding to be provided
AFMPs process agreed	EGM IWG	n/a	June 2019 (agreement)
MUs agreed	EGM IWG	n/a	June 2019 (agreement)
[FRVs agreed]	EGM IWG	**No extra resources needed.** This is only possible in case an FRV definition method other than "aggregated SPA-level FRPs" is chosen.	[June 2019 (agreement)]
Collate data for Box 1	EGMP Data Centre, Range States, International Modelling Consortium & Agriculture Task Force	Academic Technician to collate information for Barnacle Goose (Russia/Germany & Netherlands population) **and** Greylag Goose at the EGMP Data Centre (position also to develop the impact models, see below); 20% time per year for 2 years (**EUR 38,400** of overall budget for the position of EUR 192,000)	July 2019 (funding for academic technician provided) Refer to Annex 1 for more details
Development of population models	EGMP Data Centre & International Modelling Consortium	Dutch group (work already funded by the Netherlands)	Already agreed
Development of impact models	EGMP Data Centre & International Modelling Consortium	Academic Technician position to develop models for Barnacle Goose (Russia/Germany & Netherlands population) and Greylag Goose; (position also to collate data for Box 1, see above);	July 2019 (funding for technician position provided) Refer to Annex 1 for more details

		80% time per year for 2 years (**EUR 153,600** of overall budget for the position of EUR 192,000)	
AFMP compilation	EGMP Secretariat, Data Centre & external consultant	**ca. EUR 5,650**	December 2019 (funding provided)
[FRVs agreed]	EGM IWG	This will be only necessary if the option "aggregated SPA-level FRPs" amongst the FRV definition methods is chosen (**resources needed are to be identified**). If other methods are chosen, then FRVs can be agreed already in June 2019 (see above).	[June 2020 (agreement)]

5. Data needs for the purpose of the Barnacle Goose AFMP (Russia/Germany & Netherlands population)

The following data is required to ensure the timely delivery of each step in the process:

Table 2. Data needs for the development of the Barnacle Goose AFMP for the Russia/Germany & Netherlands population

Purpose / activity	Type of data	Responsibility	Timeframe for data to be provided
Population models	Capture-Mark-Recapture material (leg-banding and metal ringing)	Dutch research institutes (NIOO, Wageningen Univ., SOVON), EURING and DC	March 2020
Population models and assessment of impacts of derogations and harvest	Population counts (mid-winter)	Range States and DC	March 2020
Population models and assessment of impacts of derogations and harvest	Off-take under derogations and hunting and their seasonal distribution	Range States and DC	March 2020
Agricultural impact assessment	Damage assessment, compensation, subsidies paid, derogation off-take statistics (according to the indicators	Range States, Agricultural Task Force and DC	March 2020

	proposed by the Agricultural Task Force)		
Air safety risk assessment	Bird strike statistics	Range States and DC	March 2021
Ecosystem impact assessment	Measurements of tundra degradation; effect on breeding meadow birds	Range States and Data Centre	March 2021
Population model updates	Population counts (summer; pending decisions on MUs)	Range States and DC	March 2021
Agricultural impact models	Damage assessment statistics	Range States, Agricultural Task Force and DC	March 2021

Action requested from the EGM IWG

- Agree on the proposed content and outline of the AFMPs for the three Barnacle Goose populations;

- Take note of the indicative timeline for the development of the AFMP for the Russia/Netherlands & Germany population and the steps that are involved;

- Consider the resources that are required for the entire process, for the timely delivery of the AFMP by June 2020.

Annex 1

Justification for Extra Financial Resources (Academic Technician based at Aarhus University) needed to collate Information on Management Actions and Development of Impact Models

The EGMP Data Centre, the International Modelling Consortium and the Agriculture Task Force are currently collating data needed for the assessments described in Box 1. This includes statistical data on the extent of agricultural damage and actions taken to mitigate agricultural damage. However, data is still lacking to undertake a complete assessment, as indicated in Box 1. Furthermore, there has not been any initiative yet to collate information concerning risks to air safety as well as risks to other flora and fauna. Collating this data will require an extra effort which is currently unfunded.

Moreover, the development of impact models to assess and predict the future development of agricultural damage in particular is currently not included in the ongoing work within the EGMP Data Centre, nor within the International Modelling Consortium.

Aarhus University (AU) and Wageningen University have developed some models which can be used as a basis for the predictive impact models that are required for the Barnacle Goose process. It is proposed to use landscape-scale agent-based simulation tools (the so called ALMaSS system developed by AU), which can take into account land use, farming practices, number of geese competing for the resources, as well as management actions (such as derogation and hunting, designation of accommodation areas, nature management).

In order to parameterise and test these models for the Barnacle Goose (and at the same time for the parallel process concerning the Greylag Goose), an Academic Technician, closely affiliated to the Aarhus University ALMaSS modelling group, the EGMP Data Centre and the International Modelling Consortium, would be an efficient solution.

The Academic Technician would focus on the following tasks:

1. Collating information for the Box 1 assessments for the Barnacle Goose (and for the Greylag Goose) with 20% of his/her time over 2 years (July 2019-July 2021);

2. Developing and testing impact models for the Barnacle Goose (and for the Greylag Goose) for selected countries (e.g., regions/provinces in Denmark, the Netherlands and Sweden for which detailed landscape models have been developed by AU) with 80% of his/her time over 2 years (July 2019-July 2021).

The total costs for the Academic Technician are estimated at EUR 192,000 for the 2 years (July 2019-July 2021).