

Greylag Goose Session

*Adaptive Flyway Management Programme for the NW/SW
European Population of the Greylag Goose: **Indicators***

Adaptive Flyway Management Programme for the NW/SW European Population of the Greylag Goose
AEWA_EGM_IWG_5_14_AFMP_GG_CORR1

Monitoring indicators and programmes: general principles

Indicators to be used in the assessment of the ISSMP and the AFMP

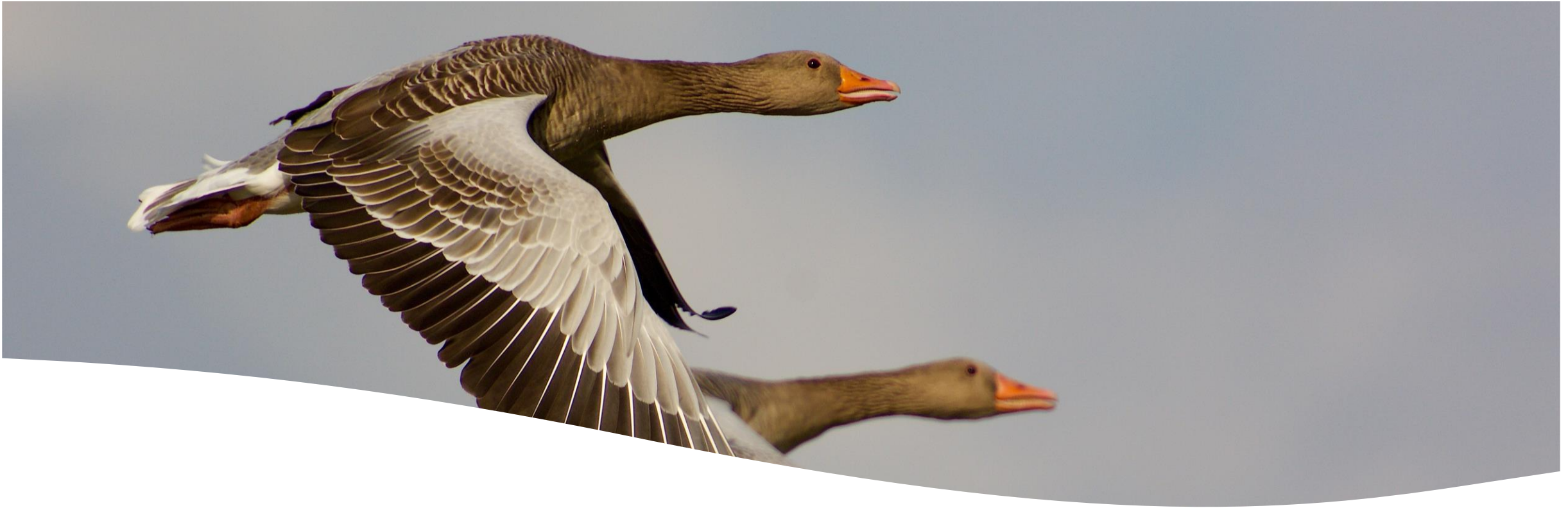
- Annual data collection in most cases, but reporting only in Dec. 2025 in most cases
- Same indicators for the same species
- We need indication of trends (increasing or decreasing) not necessarily absolute values
- Indicators should be robust but relatively inexpensive, building on existing data collection
- Use of relative annual indices at national level combined into multinational indices at flyway level

Indicator fact sheets (Annex 5)

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Monitoring indicators and programmes: proposed indicators

- I. Maintain the population at a satisfactory level
 1. Population size compared to the Favourable Reference Population (FRP)
 2. Range extent compared to Favourable Reference Range (FRR)
- II. Minimize agricultural damage and conflicts
 1. Relative change in damage payments
- III. Minimize the risk to public health and air safety
 1. Risk of zoonotic influenza transmission to the general public
 2. Number of bird strikes caused by Barnacle Goose
 3. Number of Barnacle Geese passing over the commercial airports
- IV. Minimize the risk to other flora and fauna
 1. Area of natural habitat or habitat of threatened species negatively affected by Barnacle Goose
- V. Maximise ecosystem services
 1. Number of people enjoying watching geese
 2. Number of recreational Greylag Goose hunters
 3. Number of Greylag Geese killed and used
- VI. Minimise costs of goose management
 1. Relative change in cost of goose management
- VII. Provide hunting opportunities that are consistent with maintaining the population at a satisfactory level
 1. Available sustainable hunting quota



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Protocols for the iterative phase

- A 10/12 year cycle of the ISSMP;
- **Two 6-year** cycles of the AFMP, and within the AFMP:
 - **1-year cycles** of monitoring, assessment, decision making and workplans



ISSMP

12 year cycle of evaluation and adaptation related to:

- Goals
- Objectives (Fundamental, Means and Process)
- Alternative actions related to objectives

6 year cycle of evaluation and adaptation related to:

- Management Units
- FRVs
- Box 1
- Population target
- Population models
- Impact models
- Protocol for the iterative phases
- The range of and methods for indicators and programs
- The state of indicators and evaluation towards achieving objectives

1 year cycle monitoring and assessment related to:

- The state of indicators related to population models/harvest assessment
- Evaluating progress toward achieving objectives
- Identify appropriate management actions
- Increase understanding of population dynamics
- Refine models of population dynamics
- Annual work plans for the Task Force, Data Centre and Range States
- National implementation and, if needed, adaptation of harvest regulations



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A 6-year cycle of the AFMP

- Management Units (Chapter 1);
- FRVs (Chapter 2);
- Box 1 (Annex 2);
- Population target (Chapter 3, Annex 3);
- Population models (Chapter 4, Annex 4);
- Impact models (Annex 5);
- Protocol for the iterative phases (Chapter 6);
- The range of and methods for indicators and programs (Chapter 5, Annex 6);
- The state of indicators and evaluation towards achieving objectives (Chapter 5, Annex 6).

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1-year cycles within the AFMP

- The state of indicators related to population models/harvest assessment (Action 4.2 in the ISSMP);
- Evaluating progress toward achieving objectives;
- Identify appropriate management actions;
- Increase understanding of population dynamics;
- Refine models of population dynamics;
- Update work plans for the Task Force, Data Centre, Range States (Annex 1);
- National implementation and, if needed, adaptation of harvest regulations.

Short-term annual monitoring needs

1. An evaluation of potential bias in reported offtake in each range state (between 2020-2022);
2. Development and implementation of a coordinated and systematic monitoring program including development of indicator fact sheets for the long-term data need (2020-2022);
3. Monitoring of:
 - a. Mid-winter population counts for each range state (January 2021 and 2022);
 - b. Breeding pairs per range state derived either from:
 - Option A: Summer counts per range state + proportion of young and older birds
 - Option B: Number of breeding pairs based on Art. 12 indexed by the results of Common Bird Monitoring
 - c. Offtake (harvest + derogation) per range state, distinguished between "breeding" period (1 February-31 July) and "post-breeding" period (1 August-31 January) seasons where possible (season 2020/21 and 2021/22);
 - d. Crippling rate for the same periods as offtake (season 2020/21 and 2021/22);
 - e. Multi-state Capture-Marking-Resighting (CMR) analysis to estimate annual survival rates and MU transition probabilities (between 2020-2022);
4. Monitoring data is to be submitted to the EGMP Data Centre on an annual basis, and no later than 30 April each year (anticipating time lag of 1 year between data collection and submission);;
5. Data collation and analysis (April-May 2021 and 2022);
6. Harvest assessment at population level (May 2021 and 2022);
7. Decision making (EGM IWG) (mid-June 2021 and 2022);
8. Implementation by Range States (2021 and 2022).



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Long-term annual monitoring needs

1. Monitoring of:
 - a. Mid-winter population counts for each range state;
 - b. Breeding pairs per range state derived either from:
 - Option A: Summer counts per range state + proportion of young and older birds
 - Option B: Number of breeding pairs based on Art. 12 (repeated in 2021 and/or 2024) indexed by the results of Common Bird Monitoring
 - c. Offtake (harvest + derogation) per range state, distinguished between "breeding" period (1 February-31 July) and "post-breeding" period (1 August-31 January) seasons where possible (from season 2022/23 onwards);
 - d. Crippling rate for the same periods as offtake (from season 2022/23 onwards);
 - e. Multi-state Capture-Marking-Resighting (CMR) analysis to estimate annual survival rates and MU transition probabilities;
2. Monitoring data is to be submitted to the EGMP Data Centre on an annual basis, and no later than 30 April each year (anticipating time lag of 1 year between data collection and submission);
3. Data collation and analysis (from April-May 2023 onwards);
4. Optimal harvest strategy at MU level (from May 2023 onwards);
5. Decision making (EGM IWG) (from mid-June 2023 onwards);
6. Implementation by Range States (from 2023 onwards).