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## Pink-footed Goose Session

*Evaluation of the Pink-footed Goose ISSMP implementation*

*The Pink-footed Goose Task Force, presented by Jesper Madsen*

EGM IWG9 \* 18-20 June 2024 \* Tromsø, Norway



# AEWA European Goose Management Platform

Financial support for evaluation and revision provided by:

Members of the Pink-footed Goose Task Force and their funding bodies



**Ministry of Environment  
of Denmark**

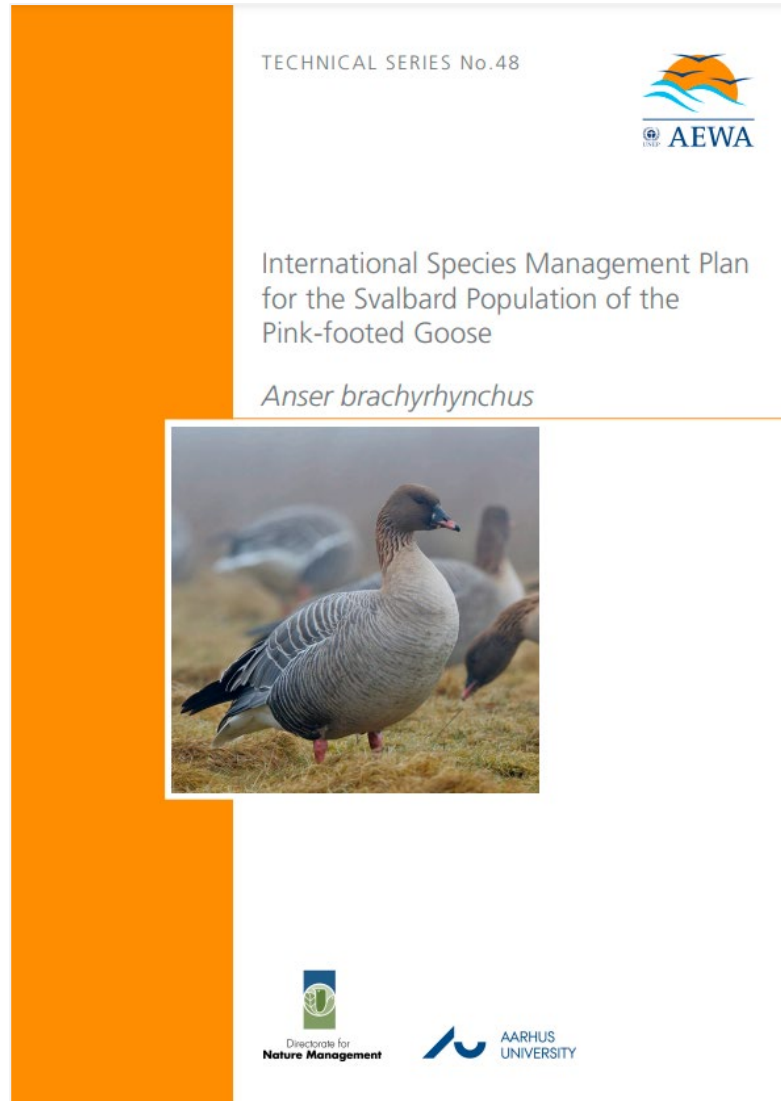
Environmental  
Protection Agency



EGM IWG9 \* 18-20 June 2024 \* Tromsø, Norway



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## ISSMP

- Initial workshop 2010
- Adopted by Meeting of the Parties to AEWA (MOP5) 2012
- Implementation workshop 2012
- Adaptive harvest management implemented 2013
- Evaluation 2024
- Planned revision 2025

The first European flyway-based adaptive management plan for a migratory waterbird population

EGM IWG9 \* 18-20 June 2024 \* Tromsø, Norway

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## Goal and objectives

Maintain favourable population status at flyway level while taking into account biodiversity, economic and recreational interests

Maintain population range and ecological integrity

Minimize agricultural conflicts

Maintain sustainable and stable population

Avoid increase in tundra vegetation degradation

Allow recreational use not jeopardizing population or social acceptance

Improve habitat management

Optimise compensation and subsidy systems

Improve recreational values of geese

Increase habitats where geese make no damage

Maintain a population of around 60,000 individuals

Minimise crippling of birds due to hunting

Increase information

Increase goose tourism

Restore grasslands

Adapt and optimise harvest regulations and practices

Increase hunting opportunities

Decrease disturbance

# Indicators of objectives (I-V)

## Objective I. Maintain population range and ecological integrity

### Indicators of range (2013-2022)

Country	Autumn	Winter	Spring
Norway	Stable	NA	Increase
Denmark	Increase	Increase	Increase
The Netherlands	Increase (28%)	Increase (28%)	NA
Belgium	Increase	300 km <sup>2</sup> => 500 km <sup>2</sup>	NA
Overall	Increase	Increase	Increase

Note 1: One of the drivers of range increment has been the increase in growing of maize, particularly in DK, but also in NL and BE, intensively exploited by PfG during autumn and winter

Note 2: Intensified shooting in NO and DK has not caused a decline in distribution of geese. In NO it has been shown that better organisation of the hunt in local areas has led to less hunting disturbance, elongated stay of geese and more geese shot (Tombre et al. 2022; Ambio 51: 728-742).

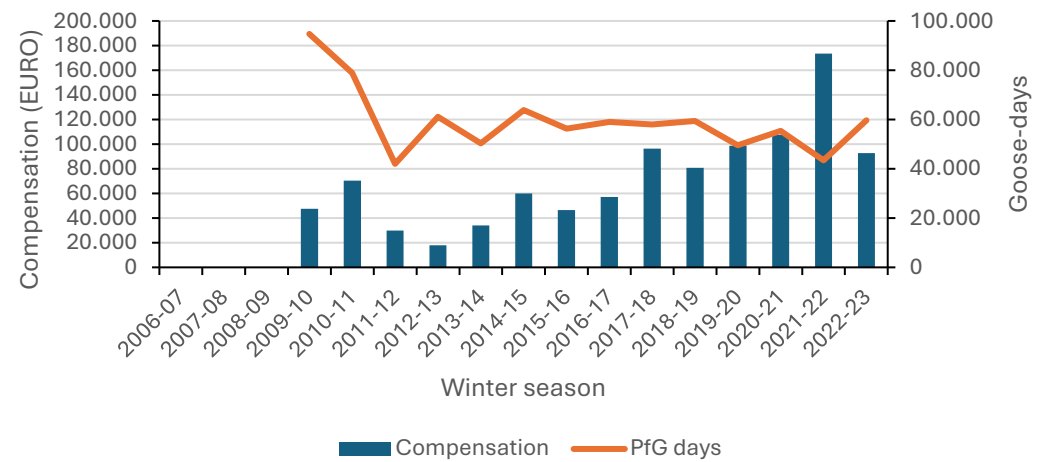
Note 3: PfG have expanded their range outside the breeding season to Sweden and Finland within the last 15-20 years and to Novaya Zemlya for breeding (Madsen et al. 2023; Current Biology)

Note 4: Breeding range in Svalbard, NO is not included in the analysis; an expansion is observed

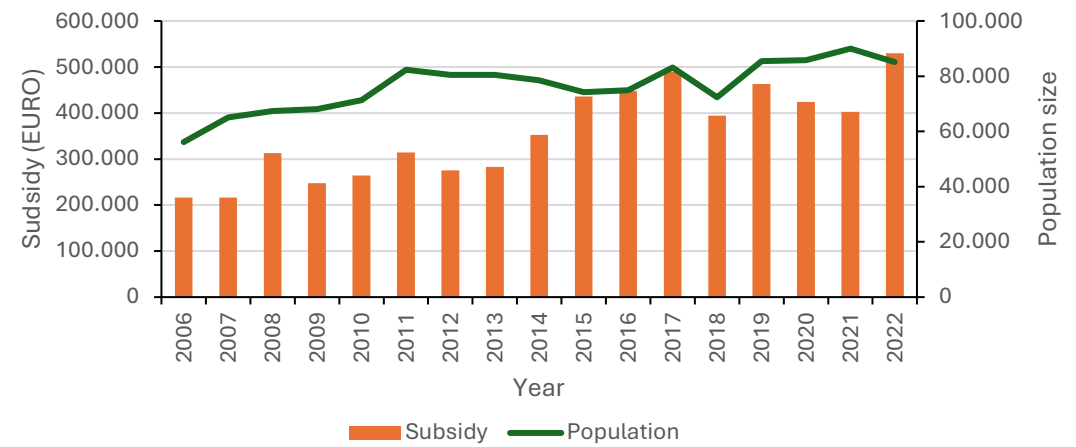
# Objective II. Minimise agricultural conflicts

## Indicators of agricultural conflict

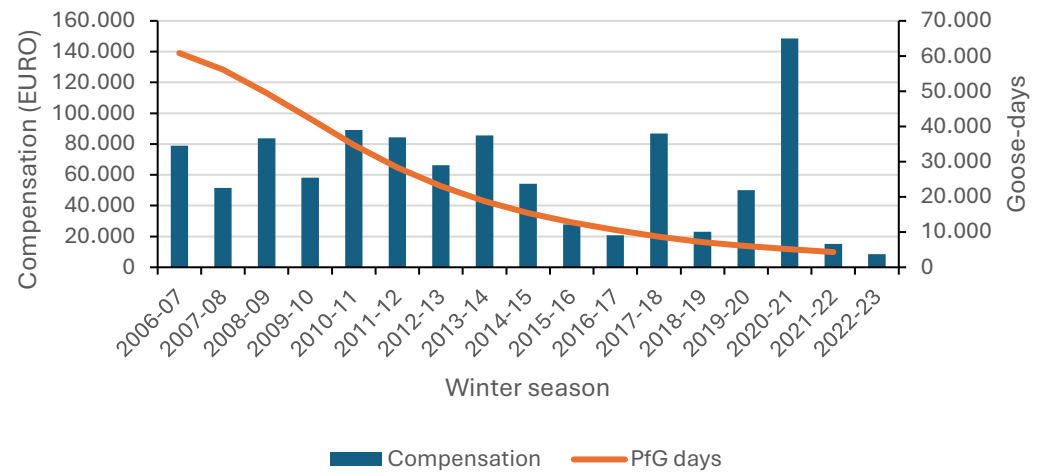
### Belgium - compensation



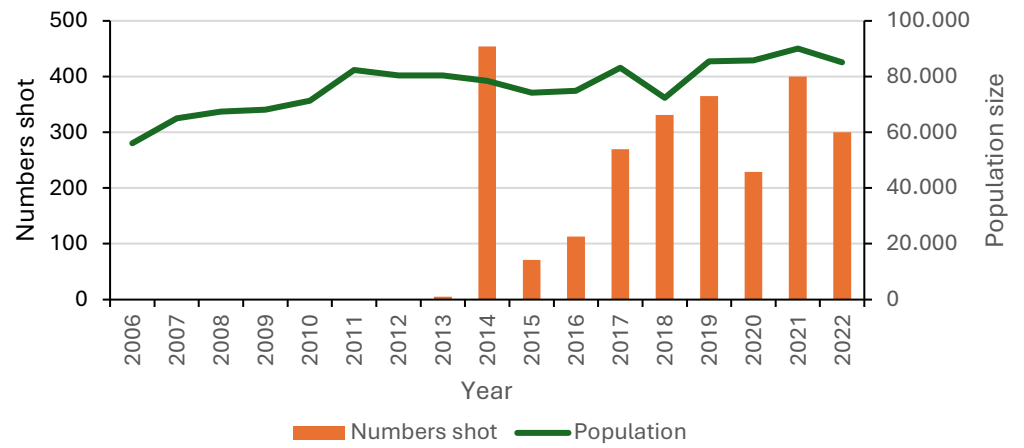
### Norway - subsidies



### The Netherlands - compensation



### Denmark - derogation shooting



# Relationship between goose abundance and socio-economic indicators

Assessment of goose damage to agricultural crops - is there a relationship between goose abundances and yield loss?

Report to the AEWA European Goose Management Platform

June 2023

## *Effects of grazing by pink-footed geese*

The experimental study in Norway showed an increasing damage by increasing grazing pressure, but with annual and site variations. The results were corroborated by modelling predicting an increase in damage under a scenario of increases in abundance. The level of damage amounted to an average of 21% of the first harvest yield, which is close to what has been measured in south Iceland (average 28%).

References to studies:

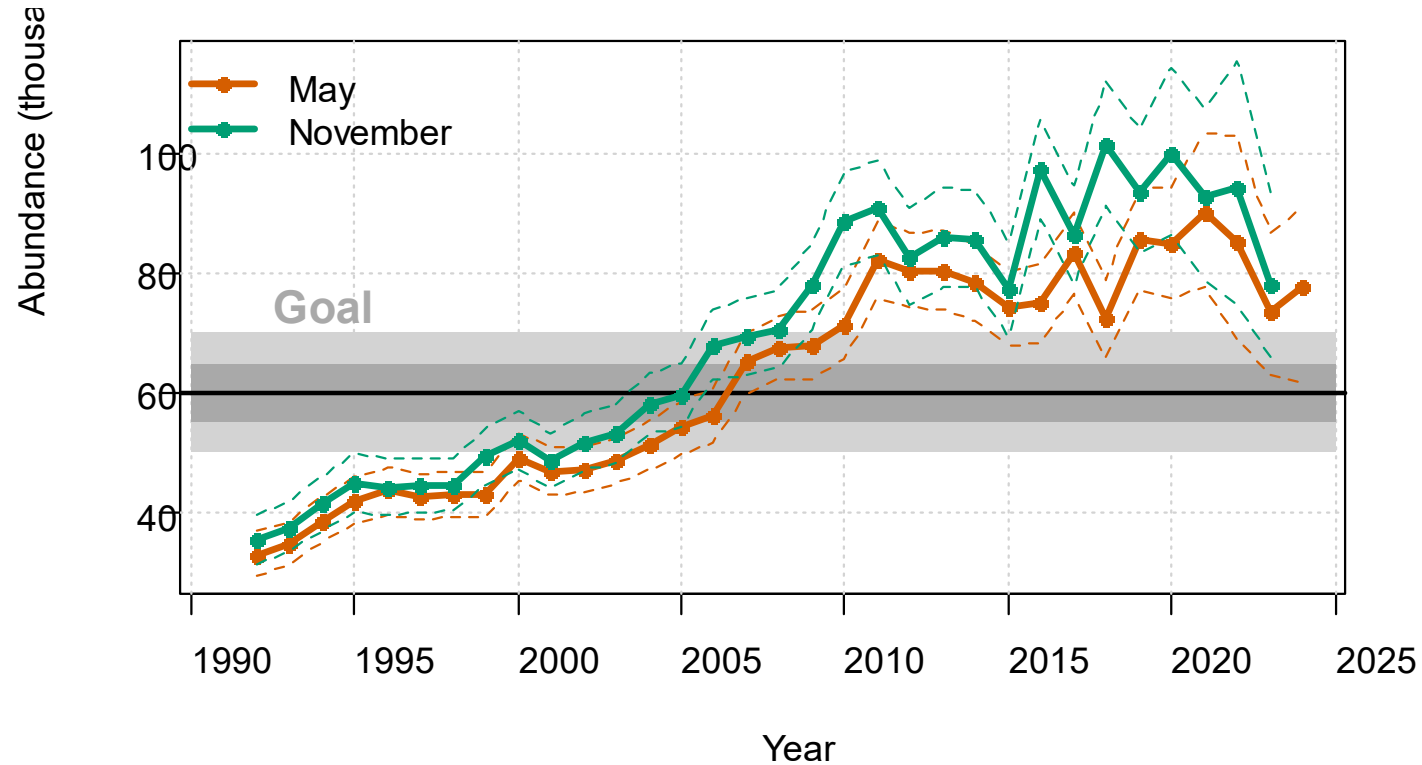
Olsen, Bjerke & Tombre (2017), *Journal of Applied Ecology* 54: 1836-1846.

Baveco et al. (2017), *Ambio* 46: S20-S223



## Objective III. Maintain sustainable and stable population

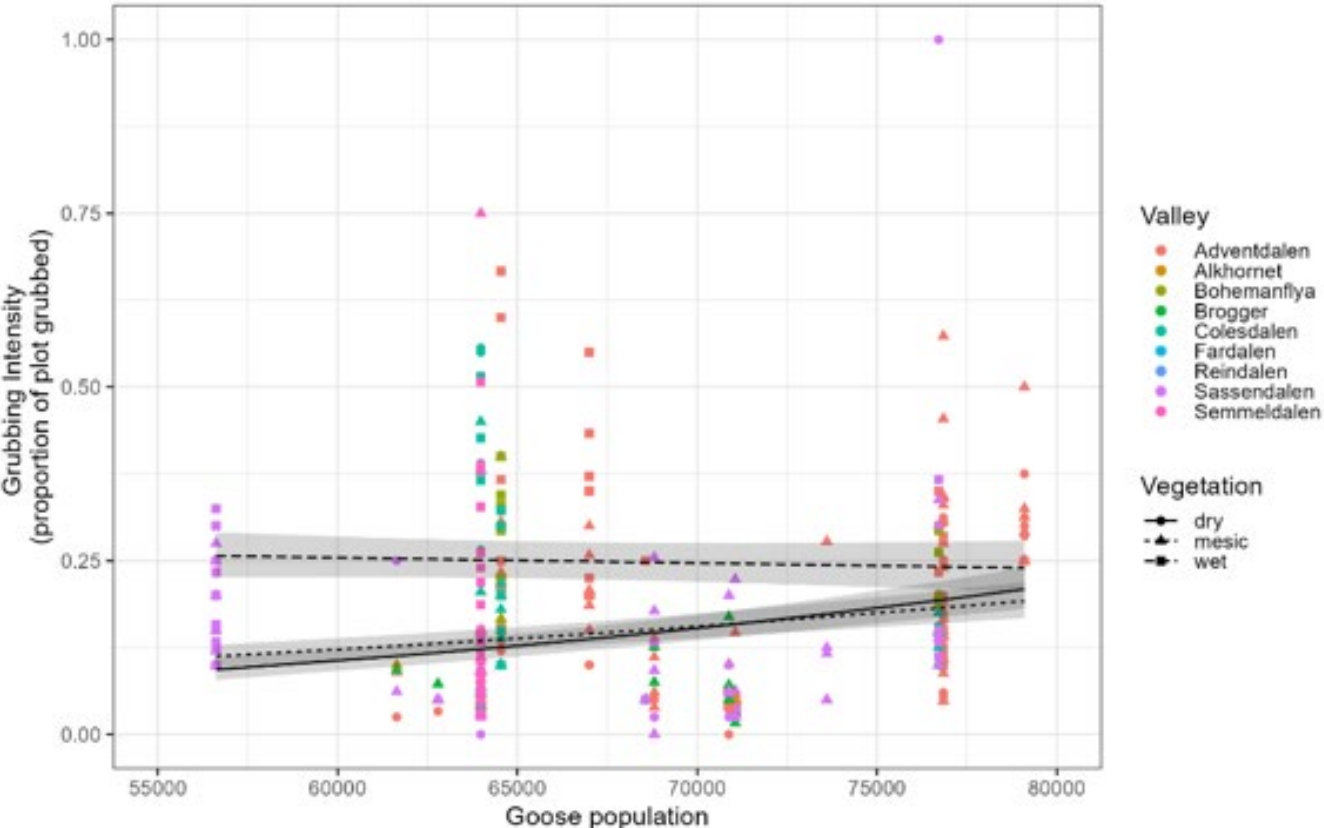
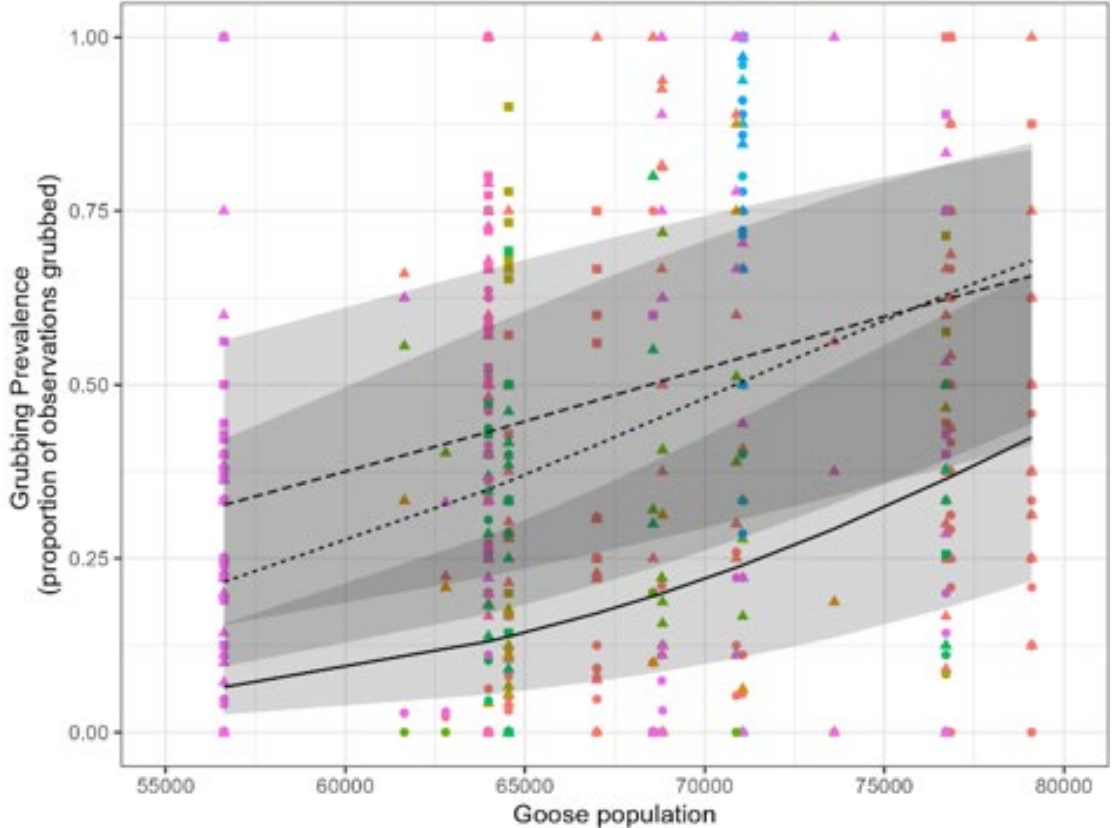
# Population development (IPM estimate)



Note 1: An adaptive harvest management program was implemented for the PfG in 2012 with the purpose of stabilising the population at a goal around 60,000 individuals (+/- 10,000). Since the implementation the harvest rate has increased, which has been a major factor causing a stabilisation of the population size. So far, the population fluctuates around 70-85 thousand in spring. See Johnson et al. 2024; Doc. AEWA/EGMIWG/9.8/Rev.1.

Objective IV. Avoid increase in tundra vegetation degradation

# Relationship between goose abundance and ecosystem effects (tundra)

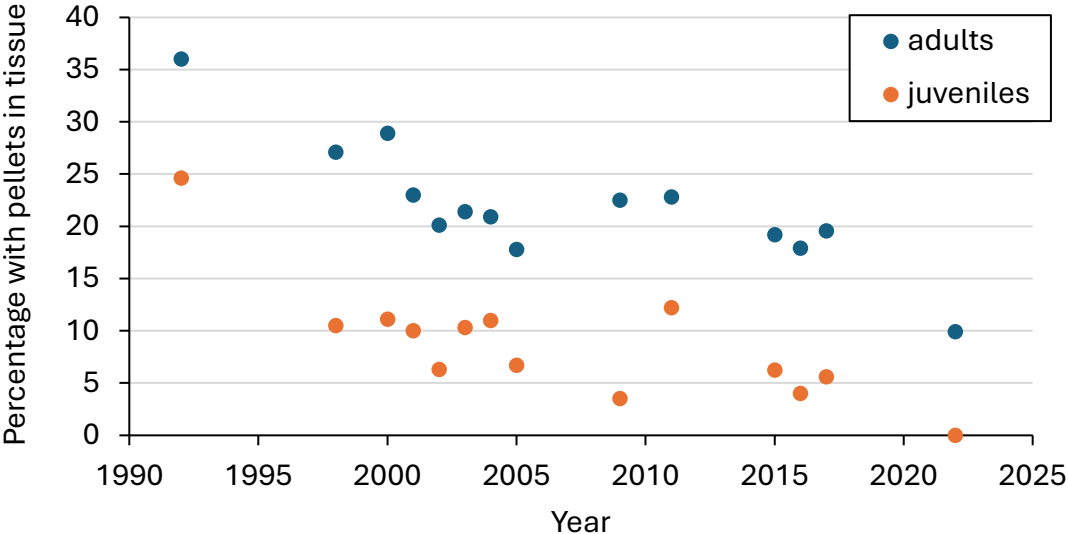


Source: Ravolainen et al. 2024, in prep.

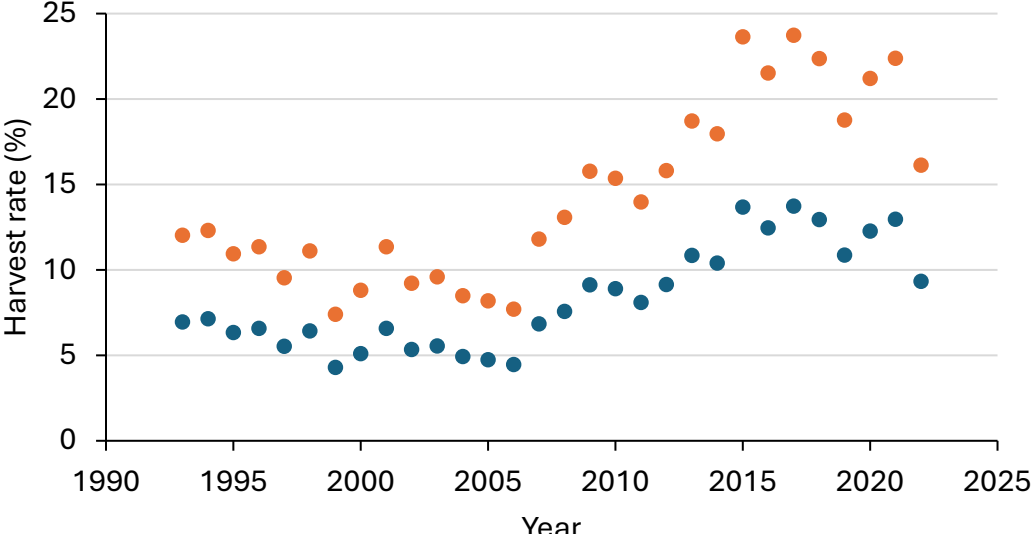
# Objective V. Reduce crippling due to hunting

## Indicators of crippling due to shotgun shooting

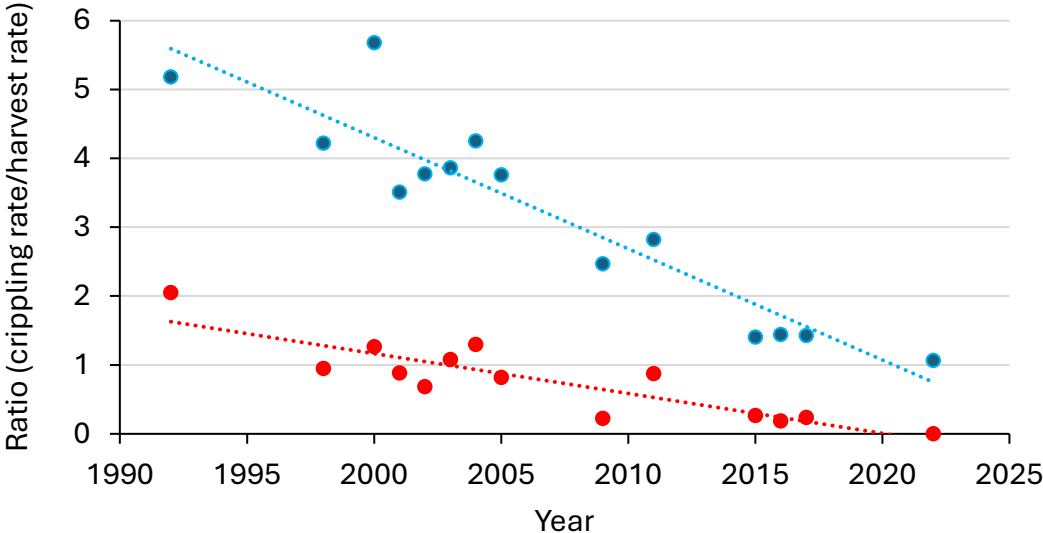
### Crippling rate



### Harvest rate (IPM)



### Crippling ratio



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## Have the goal and purpose been achieved?

### The goal has been achieved:

- (1) the range has been maintained and even expanded,
- (2) the agricultural conflicts have subsided,
- (3) the population has stabilised (yet, above the population target), primarily as a result of increased harvest levels in agreement with the implemented adaptive harvest management framework,
- (4) the extent and intensity of goose grazing effects on tundra vegetation in Svalbard has been slowed down and,
- (5) crippling due to hunting has decreased despite increasing harvest rate which is ascribed to a change in hunting practises, awareness raising and practical courses in effective goose shooting.

### Further:

- The existence of the plan itself and communication have also been an important alleviating issue in the farmers' communities.
- The plan has boosted international collaboration and science

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## Is the population / species still considered by the AEWA Technical Committee a priority for action or management (with recovery objectives) planning?

- To be decided by the Range States at the EGMP International Working Group meeting in Tromsø, Norway, June 2024. Since the population is subject to a management plan with population control objective, the decision on prioritisation is a prerogative of the Range States rather than the AEWA Technical Committee.

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**Do the Range States participating in the implementation of the management plan consider the necessity of continuing concerted actions to address the issue of damage to crops or fisheries?**

- The objectives of the ISSMP include reducing the agricultural conflict as well as reducing threats to Arctic ecosystems. The maintenance of a stable population at current levels has been a key concerted action to achieve this and has unanimously been backed by the Range States. Updates have been reported and discussed at regular PfG Task Force meetings and annual meetings of the EGMP International Working Group.

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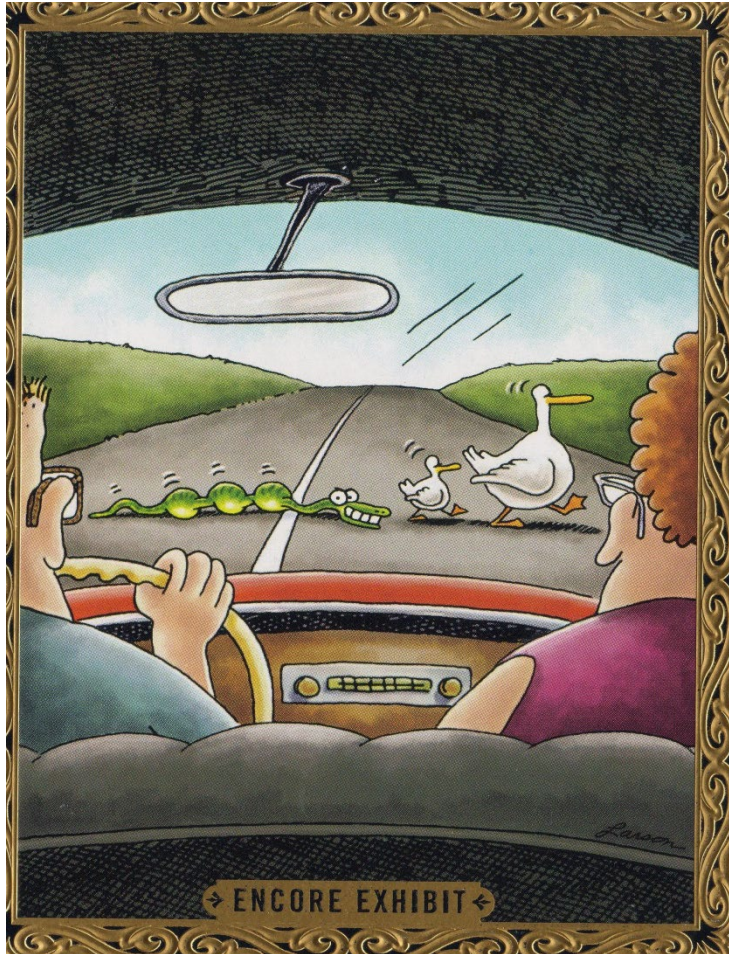
## Are conservation or management actions still needed to maintain achievements?

Continued implementation of management actions is needed, as follows:

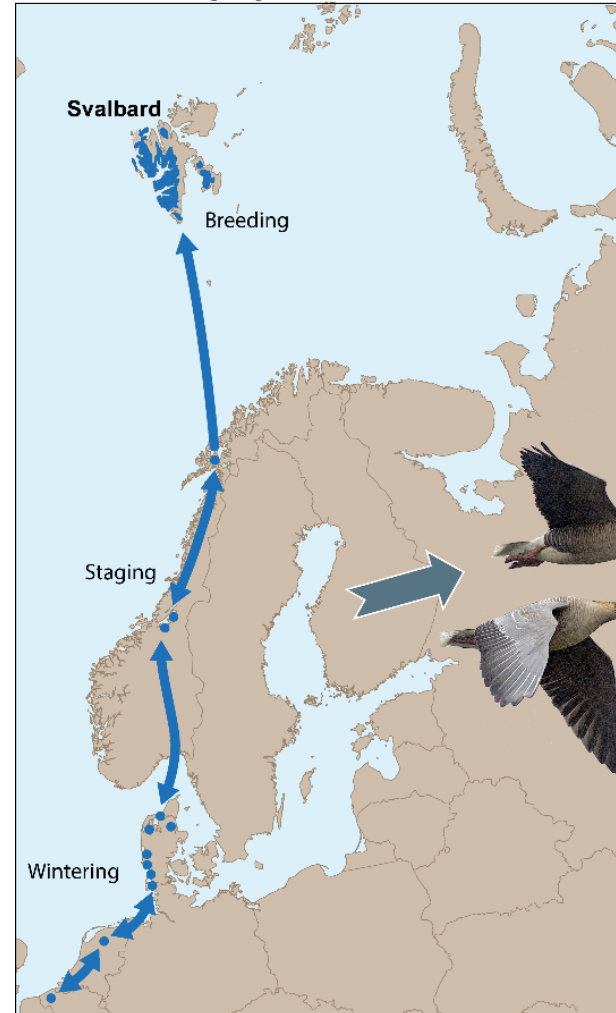
- (1) the ISSMP is based on an adaptive management framework. A continuation of the adaptive harvest management programme is important to ensure that a stable population can be maintained in order to maintain agricultural conflicts to an acceptable level and to avoid potential negative effects on Arctic tundra ecosystems,
- (2) AHM managed to stabilise the population, but did not manage to reach the population target set out in the ISSMP. It is needed to reflect on the target and on additional and/or alternative actions to reach it,
- (3) the effects of goose grazing on tundra vegetation may change in light of observed and anticipated rapid warming of the Arctic and,
- (4) the population has rapidly and unexpectedly expanded its breeding range to Novaya Zemlya in north Russia and its non-breeding range to include Finland and Sweden, partly based on an emigration from the traditional flyway. This is likely to continue in the coming decade, with yet unknown effects on the overall population size and the biodiversity and human-related interests. To manage this situation, a dynamic and adaptive framework is required.

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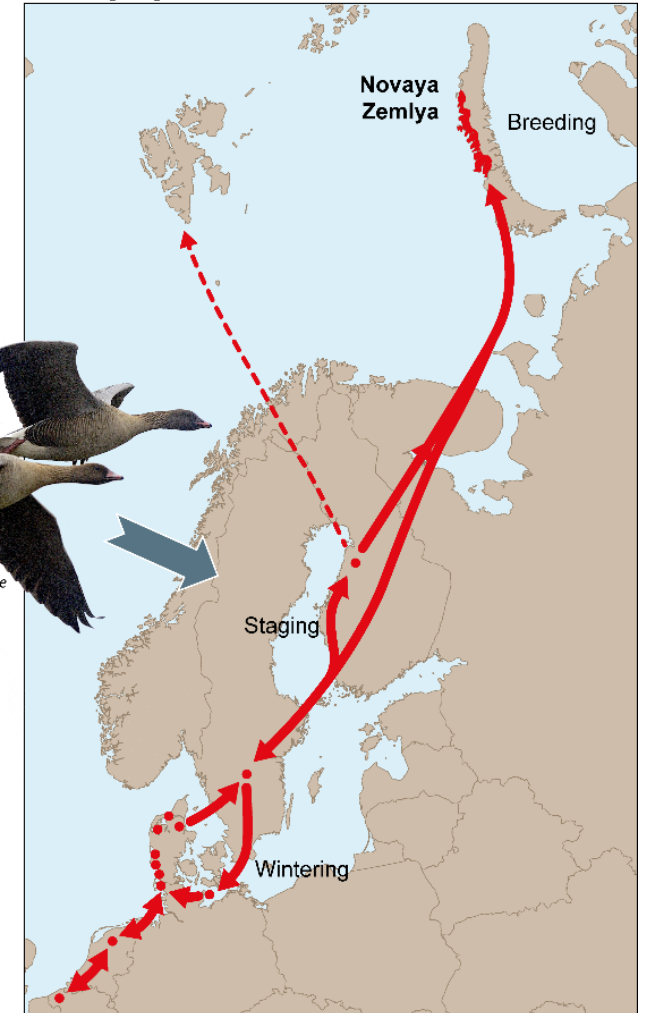
Are there new insights, biological or other background information, emerging issues or threats?



Traditional population



New population





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## **If there are new issues, does the action framework of the Plan need to be changed to address these?**

**Yes.**

The spread of the population means that Finland and Sweden (AEWA Range States) have accepted to become Range States of a revised ISSMP for the Pink-footed Goose.

The AEWA Technical Committee and the EGMP Pink-footed Goose Task Force have recommended that the population is treated as one biogeographic population.

It has to be decided by the Range States whether or not to manage the population as one or split it into two Management Units (MU) with MU-specific Favourable Reference Values, management objectives and actions. These issues will require a review and adjustment of the action framework.

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## Is the intervention logic of the Plan working?

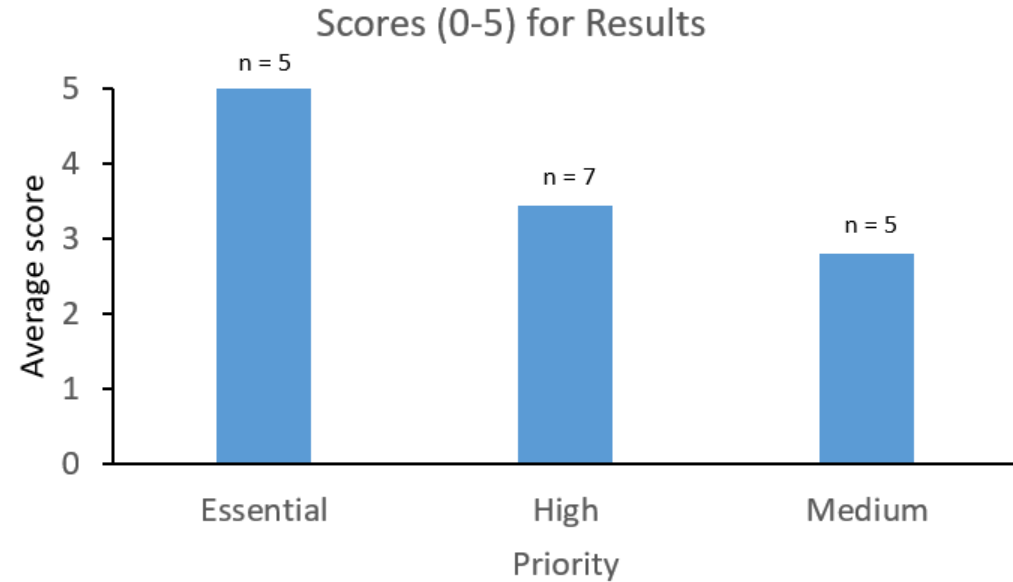
### To what extent have actions been implemented?

- Ten essential key actions were identified in the ISSMP (See Annex 1). Using the below Score system (0-5), the distribution of scores was:
  - Score 1: 1 (not implemented)
  - Score 2: 1 (limited progress)
  - Score 3: 3 (good progress)
  - Score 4: 1 (significant progress)
  - Score 5: 4 (implemented)
  - Average: 3.6

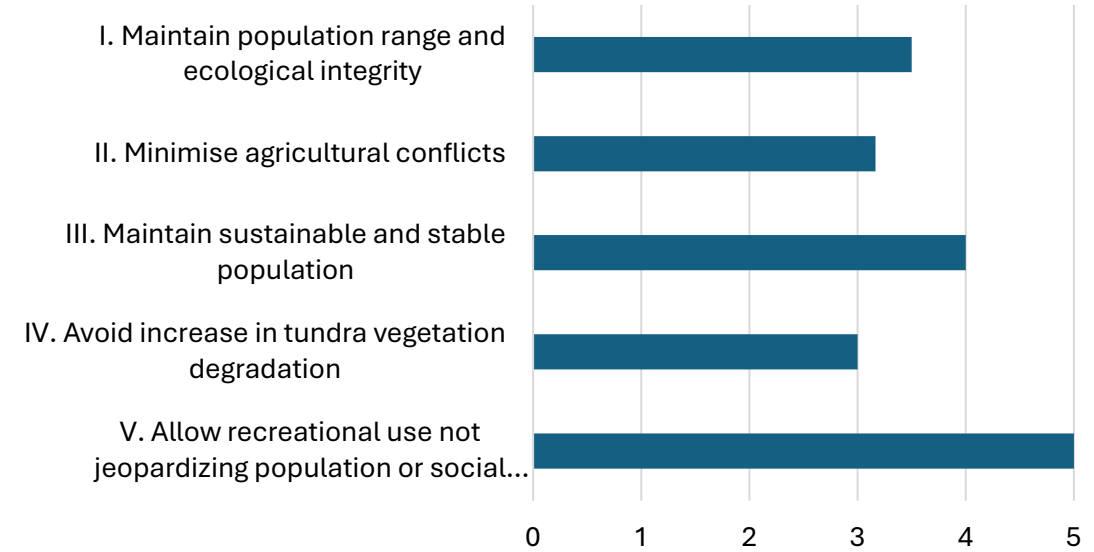
Action score	Not assessed	Not implemented / not achieved / no progress / regress	Limited progress	Good progress	Significant progress	Implemented / achieved	Mean result / objective score
0							0
1							0.1 – 1.0
2							1.1 – 2.9
3							3.0 – 3.9
4							4.0 - 4.9
5							5

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To what extent have results and objectives been achieved?



Scores (0-5) of achieving objectives



Action score	Not assessed	Not implemented / not achieved / no progress / regress	Limited progress	Good progress	Significant progress	Implemented / achieved	Mean result / objective score
0							0
1							0.1 – 1.0
2							1.1 – 2.9
3							3.0 – 3.9
4							4.0 - 4.9
5							5

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## What were the main obstacles hindering implementation and achieving defined results and objectives?

- It has been achieved to stabilise the population size, however not at the target of 60,000, but approximately 10-20,000 individuals above (spring population size). To bring the population closer to the target, it would have been necessary to take further action to increase the harvest or alternative actions to reduce adult survival or reproduction. However, it is unclear what is hindering further increase in harvest levels to achieve the optimal quota, and this needs further investigation in order to target an awareness raising in the hunters' communities.
- The proposed action to prevent the establishment of breeding colonies of PfG from the mainland in Norway has not been prioritised, but available information suggests that the number of breeding attempts are nevertheless quite small. However, it should be borne in mind, that the agricultural conflict appears to have been reduced, and it does not appear that the grazing ('grubbing') by geese on tundra vegetation has such a negative impact as originally feared, and this stabilisation has reduced the necessity for population control on the mainland of Norway. This calls for a new discussion about the population target.

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## What were the main obstacles hindering implementation and achieving defined results and objectives?

- Restoration of grassland habitat was identified as a key action to minimise agricultural conflicts. This has not been implemented except from seminatural grassland restoration projects in Belgium benefitting PfG. It has not been given priority in other range states, despite the possibilities for restoration of overgrowing seminatural grassland to provide foraging habitats for PfG in both Norway and Denmark. Particularly in Norway, priority has been given to tailor a national subsidy scheme to allow PfG (and Barnacle Geese in North Norway) to forage undisturbed on grasslands in spring.
- Development of national management plans including promotion of ecotourism has not been given high priority. Public outreach initiatives and dissemination have been taken in Belgium, Denmark and Norway, including film reportages and publishing a goose cook book, but the more strategic approach to increase ecotourism and outreach initiatives has lacked funding.

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## Conclusion and recommendations

- It is recommended to proceed with a full revision including goal, purpose, objectives and action framework