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AEWA EUROPEAN GOOSE MANAGEMENT PLATFORM

AEWA European Goose Management Platform

WORKSHOP FOR THE REVISION OF THE INTERNATIONAL SINGLE SPECIES MANAGEMENT PLAN FOR THE SVALBARD POPULATION OF THE PINK-FOOTED GOOSE

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POPULATION TARGET-SETTING FOR THE SVALBARD POPULATION OF THE PINK-FOOTED GOOSE

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Cover note:

As part of the revision process for the *International Species Management Plan for the Svalbard Population of the Pink-footed Goose*, the target population size of 60,000 individuals will be revisited. This document describes a proposed approach for eliciting a preferred population target from stakeholders participating in the Plan's revision (i.e., Range States and organisations that are permanent observers to the European Goose Management Platform), after testing this methodology on participants at the revision workshop. If stakeholders can achieve a reasonable degree of consensus about a target, this can usefully inform the decision regarding an appropriate target to include in the revised Management Plan. If, however, the responses among stakeholders represent greatly divergent opinions, then a full Multi-criteria Decision Analysis can be conducted

As part of the revision of the AEWA Pink-footed Goose International Single Species Management Plan (PfG ISSMP), the current population target of 60,000 pink-footed geese in spring will be revisited. The choice of population target can be informed by science, but it is ultimately a value judgement based on social, economic and ecological concerns. There are many techniques for arriving at a choice of preferred target, but here we describe two alternatives that represent contrasting approaches with respect to the time and effort required to develop consensus among stakeholders.

Setting population targets involves both predictions and value judgements. Science (or expert opinion) is necessary to predict the consequences of alternative population targets relative to various socio-ecological objectives, and value judgements are needed to first define those objectives and then to decide acceptable trade-offs among them. Multi-criteria decision analysis (MCDA) (Esmail and Geneletti 2018) can be a valuable tool in this context. MCDA is a systematic process for predicting the consequences of alternative choices, and then using the relative importance of a set of objectives to identify the most preferred alternatives. MCDA was used successfully to set population targets for the NW/SW European population of Greylag Goose (Johnson et al. 2022).

Developing and executing a full MCDA among many technical experts and decision-makers can be laborious and time-consuming, however. As a first step, it is necessary to predict the consequences of each candidate target relative to each management objective. For the Greylag Goose, expert opinion concerning the consequences of candidate targets had to be elicited from goose biologists because empirical information was largely lacking. Some empirical information about the effects of population size on the management objectives for pink-footed geese is available, but some expert opinion will still be needed. A second round of elicitation then goes to decision-makers, asking them to rank the relative importance of objectives so that preferred targets can be identified.

We therefore propose a less time-consuming approach that involves directly eliciting a preferred population target from relevant stakeholders. This approach could reveal a consensus position quickly because there are only a small number of Range States, and the management of pink-footed geese has operated under a target for over a decade. The direct-elicitation approach will also identify how satisfaction varies as population size diverges from the candidate target.

The elicitation would proceed by ballot to stakeholders (i.e. PfG Range States and organisations that are permanent observers to the EGMP). These stakeholders have varying interests and polling them represents a transparent and inclusive process. Ultimately, a final decision about a target will need to be agreed by the AEWA Meeting of the Parties. Understanding how different stakeholders view potential targets could nonetheless help inform those decisions.

To test the use of this approach, we propose balloting individual participants at the PfG ISSMP Revision Workshop. Participants will be encouraged to cast votes that align as closely as possible to their known institutional positions. However, after the workshop the approach will be used to formally elicit stakeholder input, with each Range State and permanent observer to the EGMP being requested to submit a single ballot after having conferred with their constituents.

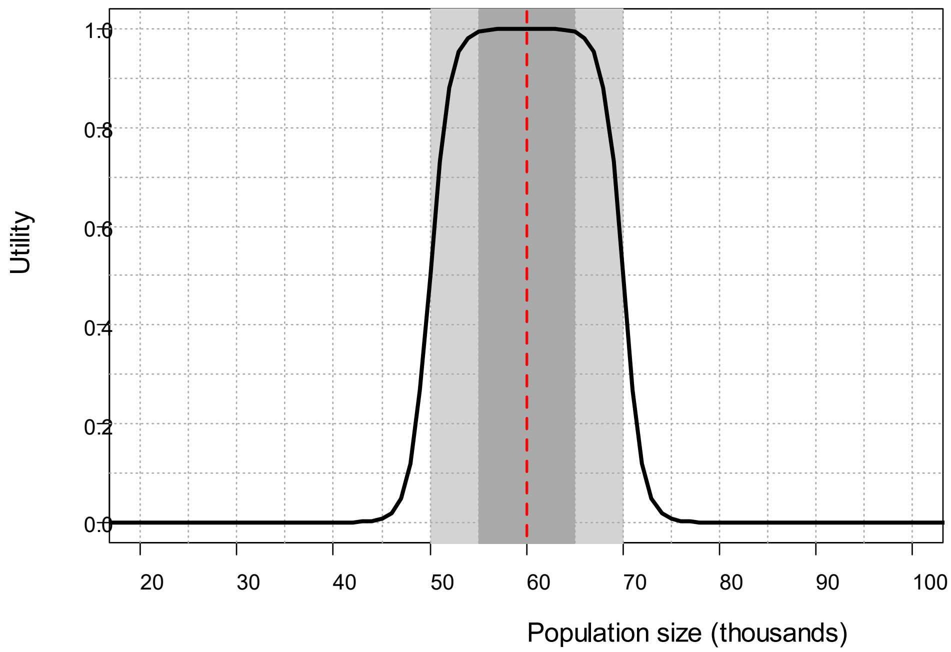
Here we give an example of a workshop ballot with *example* responses from a single respondent :

Candidate population target	completely unacceptable	somewhat unacceptable	neither unacceptable nor acceptable	somewhat acceptable	completely acceptable
60k		✓			
65k				✓	

70k					✓
75k					✓
80k				✓	
85k		✓			
90k	✓				

Once ballots are tallied, the consensus-convergence model (Regan et al. 2006) would be used to determine how collective satisfaction varies when the population varies from the most preferred target. This technique from negotiation analysis is inclusive and fair to all parties, blind to dominant personalities, immune to the influence of powerful special interests, and transparent and reproducible. Basically, the method relies on the correlations in responses among participants. Higher correlations result in more weight on those participants. In other words, participants with similar responses have more influence on the overall average. Extreme views have less influence on the overall average. By agreeing to the application of this method for creating consensus weights, all stakeholders must agree to compromise their values to some extent by explicitly recognizing the different values of others in the group (which, of course, is the basis of any negotiated settlement).

The product of this exercise is a "utility function," which can be used to derive an optimal harvest-management strategy. The existing utility curve for Svalbard pink-footed geese is provided below. A population size of 60k has the highest utility (i.e., satisfaction) and thus is the target. However, there is near complete satisfaction with populations sizes of 55k – 65k. Population sizes above and below this range are nearly or completely unsatisfactory.



A caveat to the direct-elicitation approach is that it requires each "voter" to mentally integrate the consequences of alternative population targets to determine their level of satisfaction. This is fundamentally different from the MCDA approach, where the consequence of candidate targets relative to each of the management objectives are described explicitly. Achieving consensus on the relative importance of each management objective is done as the second step of the MCDA. In the direct-elicitation approach, the "voter" is free to implicitly assign their own "weights" to the management objectives.

We propose to test the use of the direct-elicitation approach with participants at the PfG ISSMP revision workshop, and to thereafter use the approach to formally ballot stakeholders (Range States and permanent observers to the EGMP). If these stakeholders can achieve a reasonable degree of consensus about a target, this can usefully inform the decision regarding an appropriate target to include in the revised PfG ISSMP. If, however, the responses among stakeholders represent greatly divergent opinions, then a full MCDA can be conducted via email (as was done with Greylag Goose target-setting).

Literature cited

Esmail, A. B., and D. Geneletti. 2018. Multi-criteria decision analysis for nature conservation: A review of 20 years of applications. Methods in Ecology and Evolution.

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