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Electronic Supplementary Information

This supplementary information has not been peer reviewed

Title: More management, less damage? With increasing population size, economic costs of managing geese to minimize yield losses may outweigh benefits

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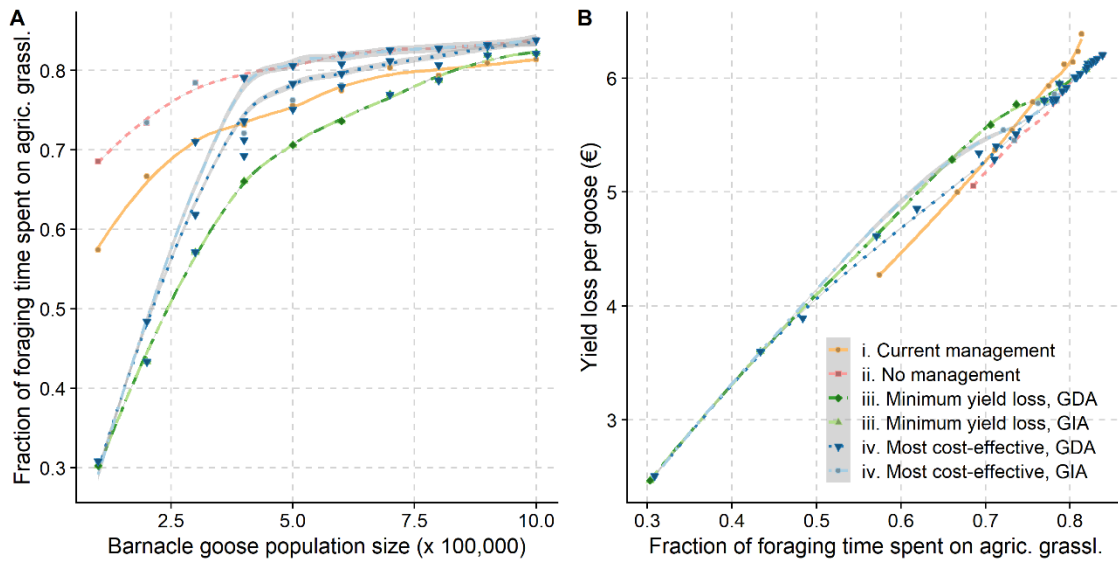


Figure S1: Relation between the fraction of foraging time spent on agricultural grassland and (A) barnacle goose population size and (B) yield loss per goose. Colours indicate the different management scenarios; lines show the local polynomial regression lines between the data points. Data points are results shown for eleven scaring costs values (€0 – €10). GDA = goose-dependent appraisal approach, GIA = goose-independent appraisal approach.

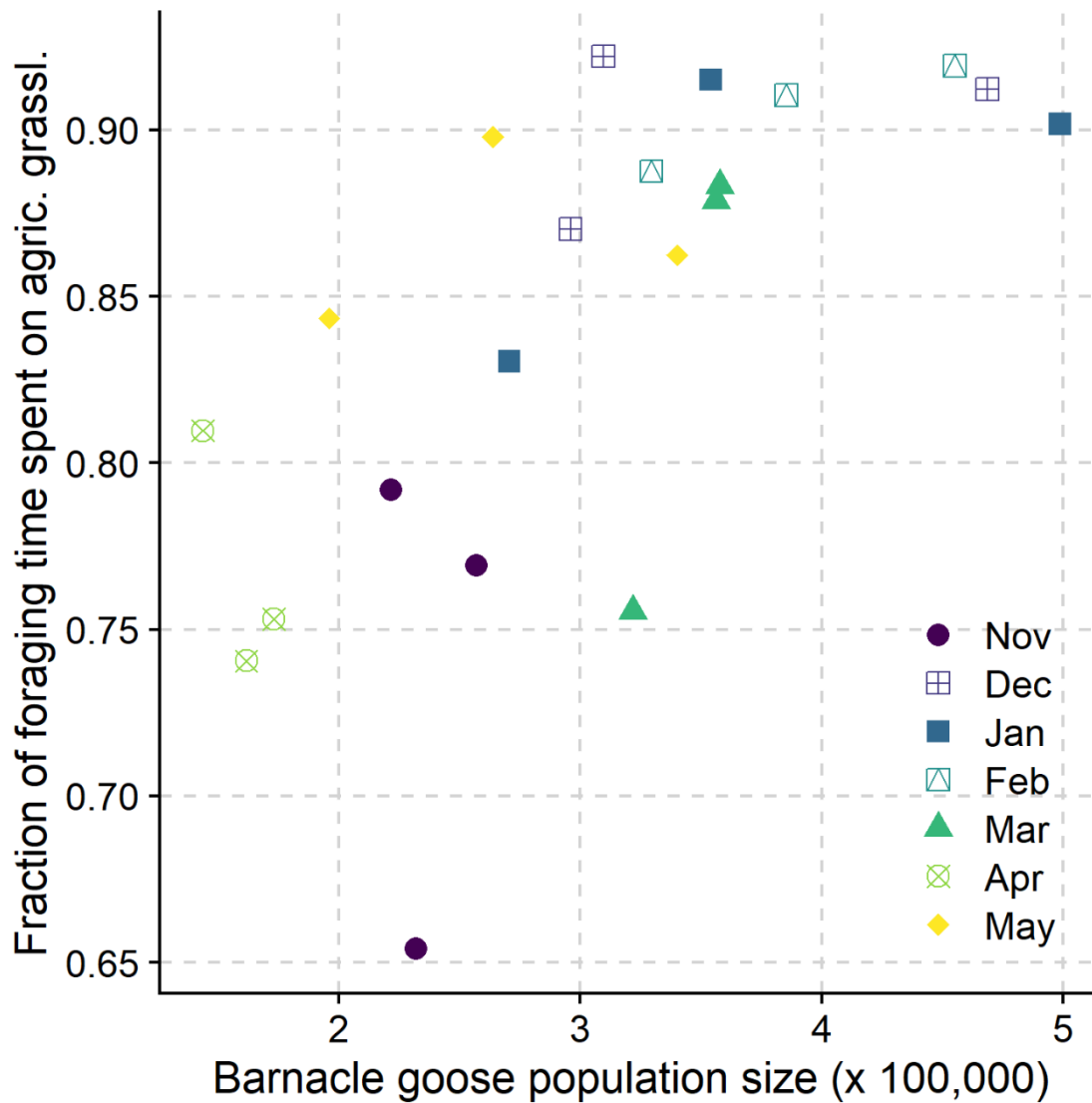


Figure S2: Fraction of foraging time spent on agricultural grassland per barnacle goose population size, estimated with monthly barnacle goose count data (Sovon; (Hornman et al. 2021)). In the period 2016-2019, goose numbers and locations were recorded once a month. We used this data (per month and year) to estimate the fraction of time that barnacle geese were spending on agricultural grasslands, using a kernel density estimate on the data and overlaying these with the map used in our model (de Jager et al. 2023).

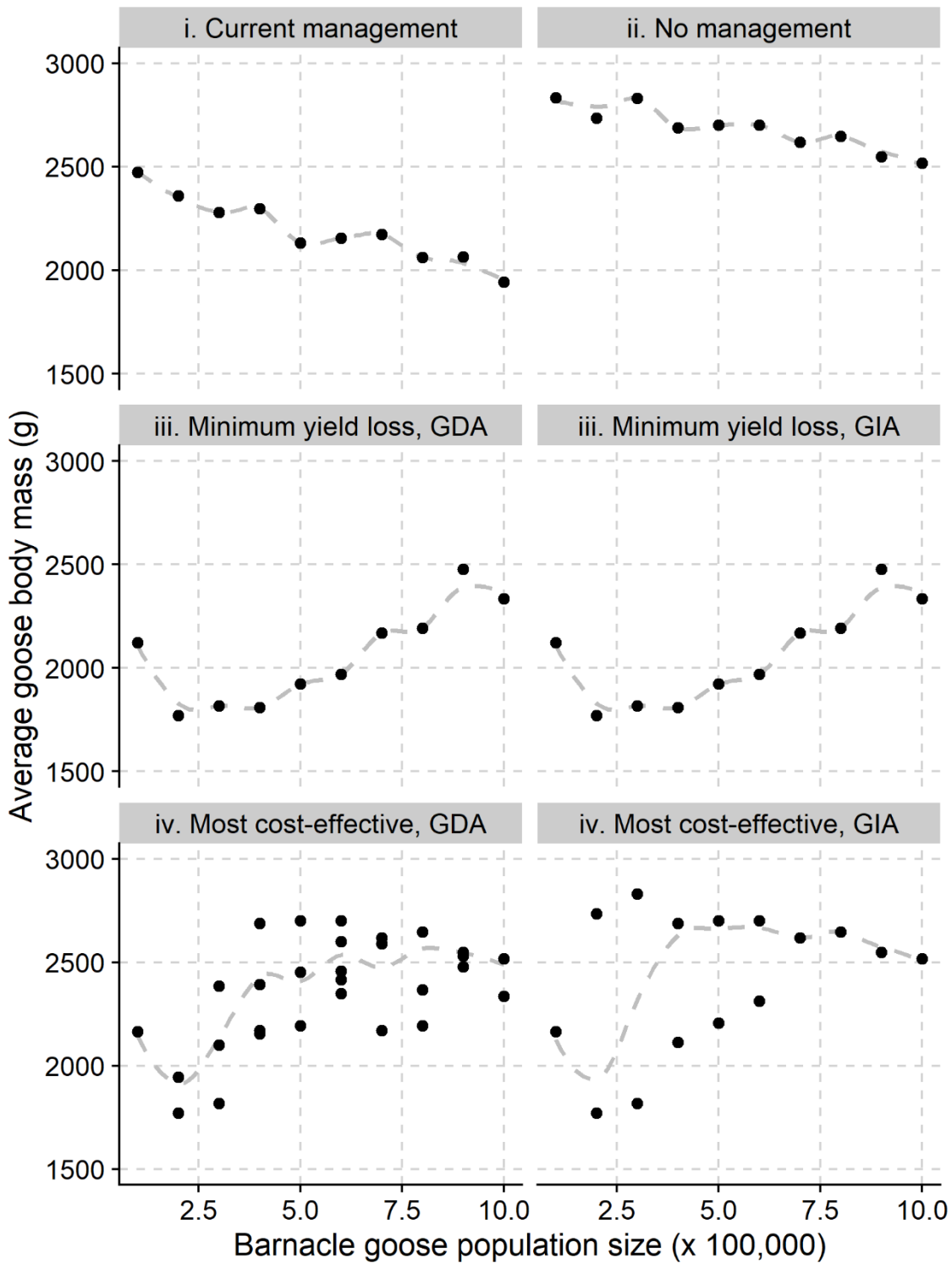


Figure S3: Average goose body mass (in g) at the end of our simulations per management scenario and barnacle goose population size. Colours indicate the different management scenarios (see main text); lines show the local polynomial regression lines per scenario, when ranging the scaring costs between €0 and €10. Data points are results shown for eleven scaring costs values (€0 – €10). GDA = goose-dependent appraisal approach, GIA = goose-independent appraisal approach. Note that scenario iii. GDA and iii. GIA are entirely overlapping.