Supporting Materials

Mitigating measures in wildlife management: testing lethal and non-lethal scaring on crop-foraging geese

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Table S1. Model selection based on the second-order Akaike's Information Criteria (AICc) across the analyses. In these analyses, we selected the same model for inference because it had the smallest difference in AICc value (Δ_i) – resulting in high Akaike's weights (w_i), *K* denotes the number of estimated parameters in each model. In each step, we selected and used the model in bold for inference. See main text for definition of predictors (treatment categories).

Predictors	***K***	Δ_i	w_i
(a) Lethal scaring: Abundance (*N*)			
Treatment Simple	**3**	**0**	**0.893**
Treatment Category	5	4.645	0.087
Treatment Day	6	7.597	0.020
(b) Human scaring: Abundance (*N*)			
Treatment Simple	**3**	**0**	**0.958**
Treatment Category	5	6.433	0.038
Treatment Day	6	11.027	0.004
(c) Lethal scaring: Minimum distance (m)			
Treatment Simple	**3**	**0**	**0.818**
Treatment Category	5	3.567	0.138
Treatment Day	6	5.839	0.044
(d) Human scaring: Minimum distance (m)			
Treatment Simple	**3**	**0**	**0.859**
Treatment Category	5	4.566	0.088
Treatment Day	6	5.571	0.053
(e) Lethal scaring: Flock size ($N_{Flock\ size}$)			
Treatment Simple	**3**	**0**	**0.472**
Treatment Category	5	0.825	0.312
Treatment Day	6	1.565	0.216
(f) Human scaring: Flock size ($N_{Flock\ size}$)			
Treatment Simple	**3**	**0**	**0.870**
Treatment Category	5	4.354	0.099
Treatment Day	6	6.667	0.031

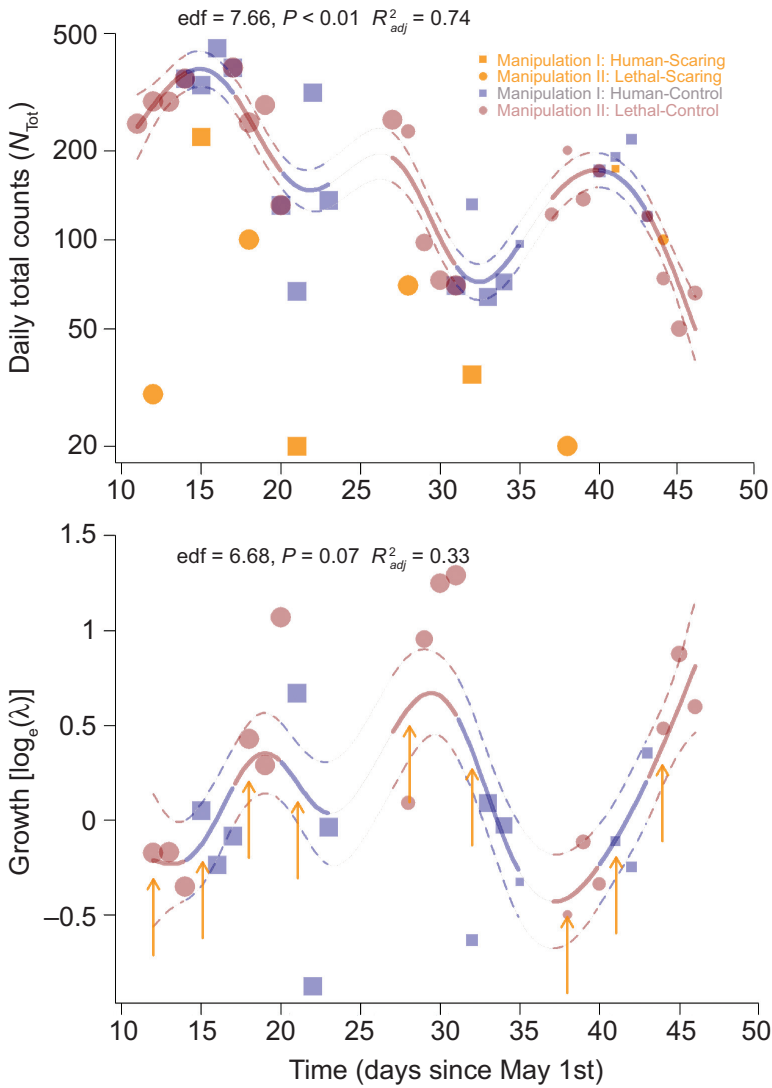


Figure S1. Temporal trends in abundance (top) and population growth (changes in abundance from pre-manipulation to day 1–3+ after manipulation). Points reflect daily summarised flock sizes across the entire study area, with different points for lethal and human scaring. Orange dots/arrows show when treatment in the form of scaring occurred. Trends are from Generalised Additive Models (GAMs) using the mgcv package (Wood 2025) in Program R. We fitted the GAM to the entire time series using mgcv's default settings (Wood 2017), with the same colouring used to separate when we performed lethal and human scaring. The Effective Degrees of Freedom (edf) denotes the degree of complexity of the smoothing in the GAM (Wood 2017), with higher values indicating more flexibility (more "wiggling") in the relationship between the responses and time.

References

Wood, S.N. 2017. *Generalized Additive Models: An Introduction with R* (2nd edition). Chapman and Hall/CRC, Boca Raton, USA.

Wood, S. 2025. mgcv: Mixed GAM Computation Vehicle with Automatic Smoothness Estimation. R package version 1.9-1. https://CRAN.R-project.org/package=mgcv.