**Appendix A: Simulation model diagram**

A screenshot of a cell phone

Description automatically generated

Figure A1. Diagram depicting how annual demographic rates were simulated incorporating both parametric uncertainty in the true overall values and annual variation, using survival of the smallest age class () as an example. This process was used to simulate all demographic rates.

**Appendix B: Sensitivity Analysis**

**Table B1.** Scenarios used to evaluate the effect of assuming a lower maximum density on model outputs.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Maximum current density (boas/ha) | Maximum carrying capacity density (boas/ha) | Quasi-extinction probability | | | | Probability of population growth | Probability of population decline |
| 50 | 500 | 1000 | 5000 |
| 0.5 | 3 | 0.000 | 0.001 | 0.001 | 0.009 | 0.48 | 0.52 |
| 0.5 | 6 | 0.000 | 0.001 | 0.003 | 0.021 | 0.49 | 0.51 |
| 1 | 3 | 0.000 | 0.001 | 0.001 | 0.009 | 0.48 | 0.52 |
| 1 | 6 | 0.000 | 0.001 | 0.003 | 0.021 | 0.49 | 0.51 |

A picture containing text, map

Description automatically generated

**Figure B1**. Projected change in population size under four different inputs for maximum current and carrying capacity density. Solid lines are the median and shaded regions represent the range in which 95% of the replications fell. The dashed horizontal line at 0 indicates no change in population size.

A close up of a map

Description automatically generated

**Figure B2.** Association between current population size and quasi-extinction probability. Each color line represents a different quasi-extinction threshold. Quasi-extinction probability was calculated by replicating the population projection 1,000 times for each initial population size and determining the proportion of replicates in which the population size fell below the quasi-extinction threshold.