Appendix 7

Comparison of mean population growth predictions from generalized additive models based on theoretical simulations and empirical data.

Our classification of IUCN Red List species enabled us to derive the proportion of all species showing a decreasing, stable and increasing population trend for each of the different combinations of decision-making bias and user compliance. We then assigned numerical values to each of the three population trends (-1 for decreasing, 0 for stable and 1 for increasing) and modeled this variable as a function of the interaction between decision-making bias and user compliance using a generalized additive model with Gaussian error structure and tensor product smooth. This resulted in an interpolated surface showing mean population trajectory (from -1 to 1) as a function of decision-making bias and user compliance classifications. This surface was then compared to the theoretical surfaces obtained using growth rates of 0.1, 0.2 and 0.3 (see main text and Figure A4.1).

Figure A6.1 shows the relationship between predictions based on theoretical and empirical data for the different tested growth rates and how it compares to the x=y line (i.e. perfect match). The overall deviation from the x=y line is low for theoretical growth rates of 0.1 and 0.2 as these values are more representative of the growth rates found in the IUCN species considered (Anseriformes, Carnivore and Certatiodactlya).

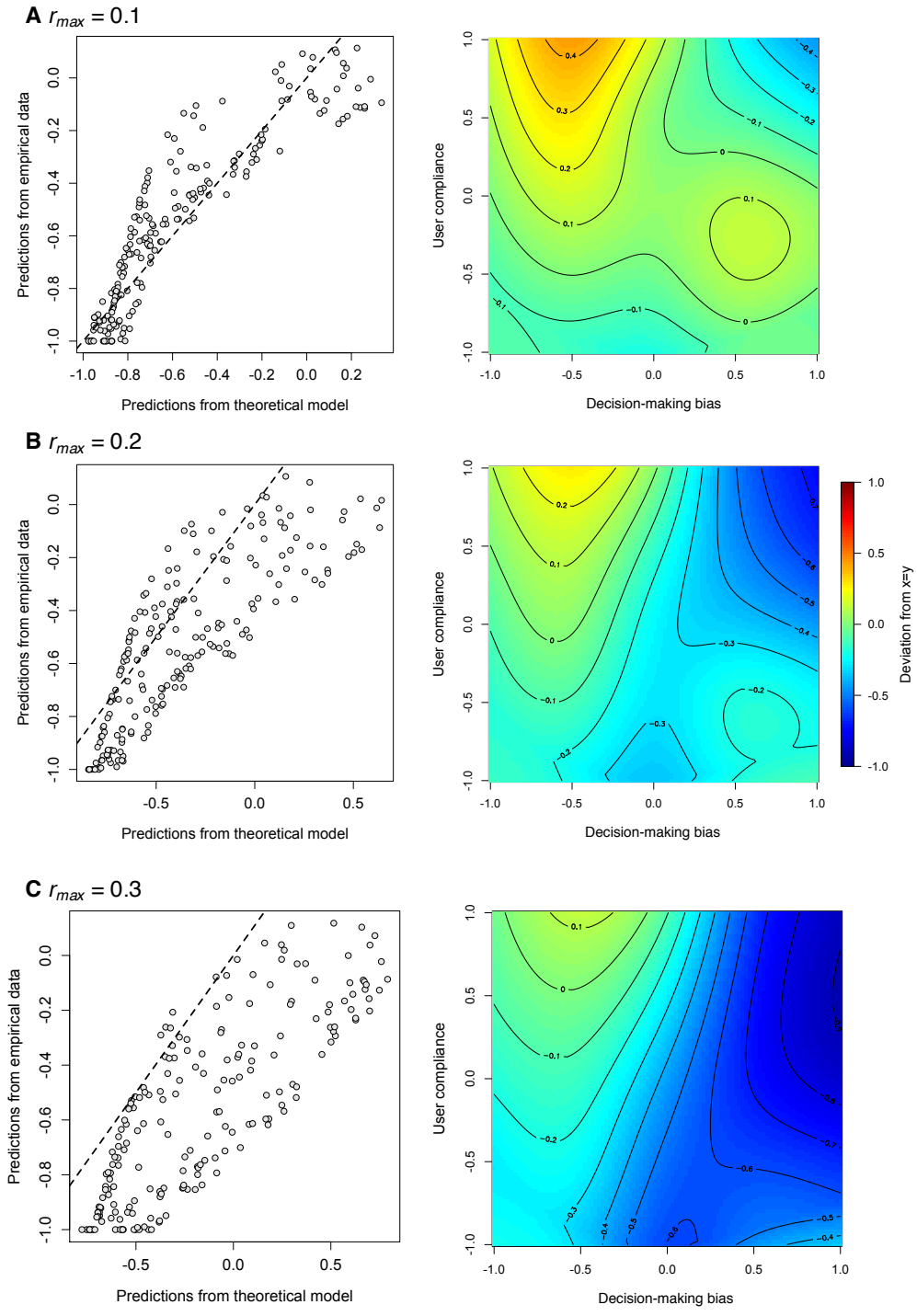

Fig. A7.1. Comparisons are shown for simulated intrinsic population growth rates of 0.1, 0.2 and 0.3. In each case, full grey circles denote a set of 200 random prediction coordinates, and the dashed line represents the x=y line. 2D contour plots show the

deviation from the x=y line for varying levels of decision-making bias (-1 = pro-user interests, 0 = unbiased and +1 = pro-conservation interests) and user compliance (-1 = low compliance, 0 = medium compliance and +1 = high compliance).