

**Supplementary information** for “Assessing species distributions and the effects of habitat fragmentation: The case of the giant panda”.

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This document contains twelve supplementary figures complementing the main findings of the dissertation. Explanatory legends can be found under each figure. If a figure was too large to fit the legend on the same page, the legend can be found on the page previous to that figure.

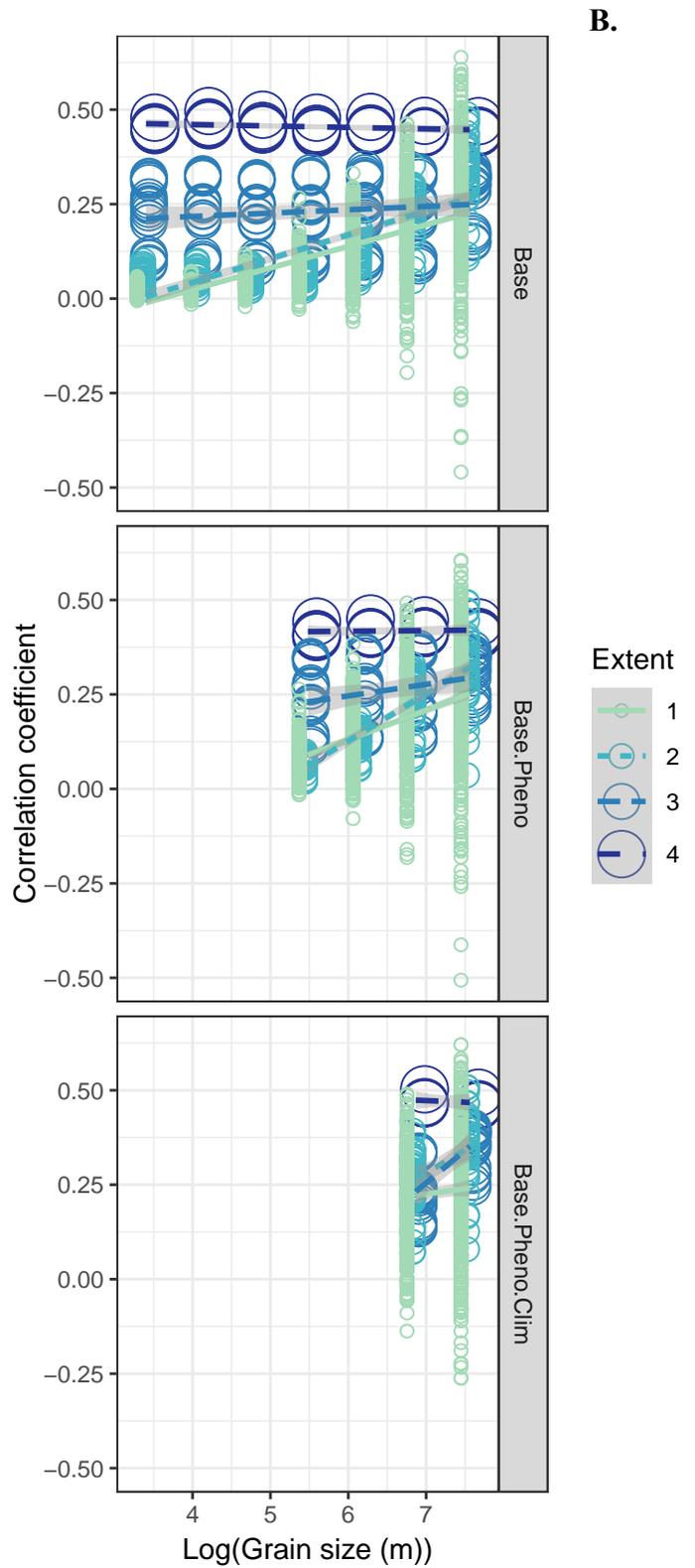
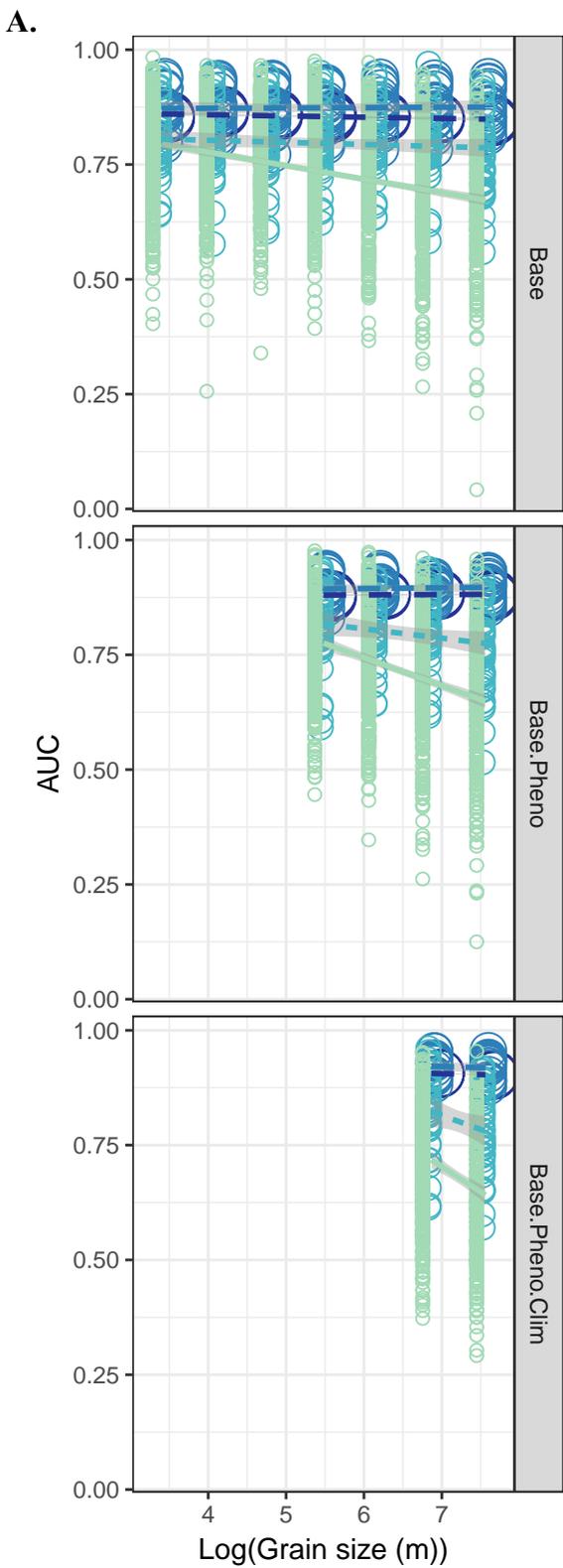
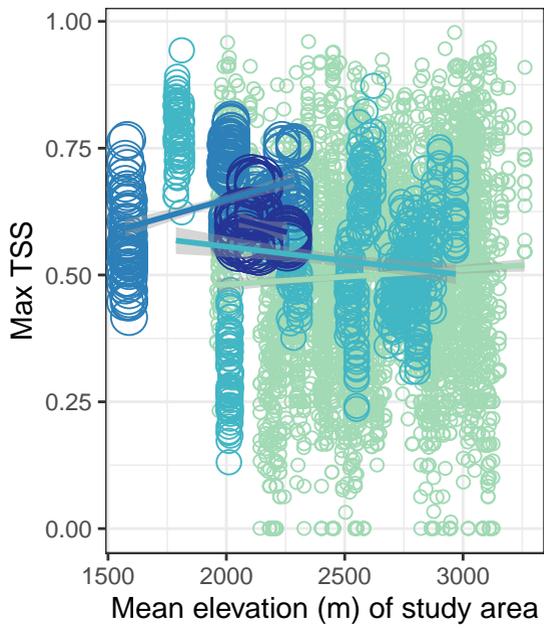
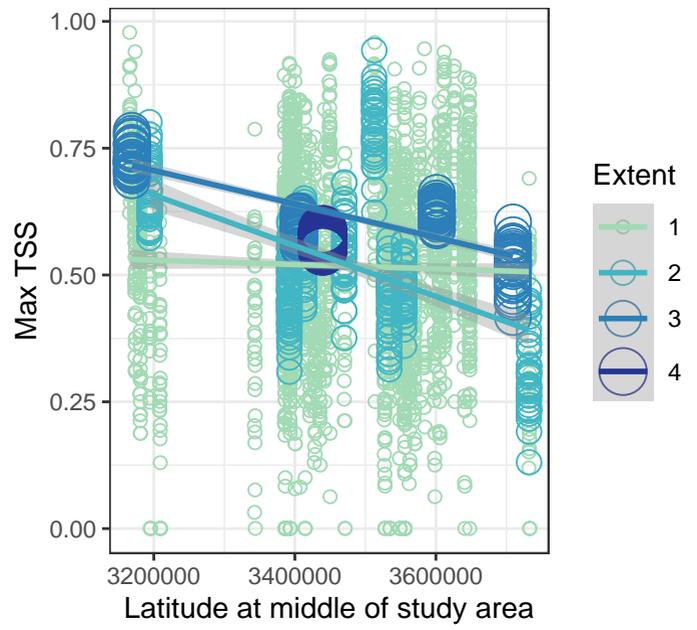


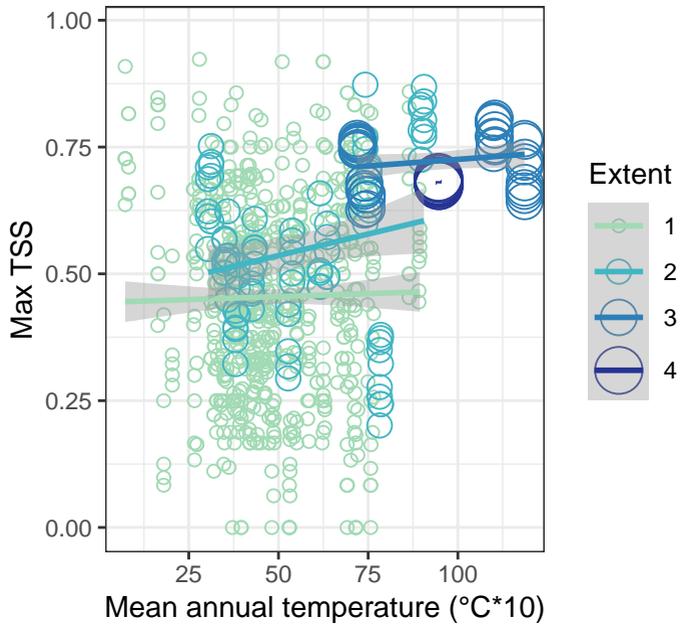
Figure S1: A. The effect of grain size on model AUC. B. The effect of grain size on the correlation between predicted probabilities of presence in test presences vs. test background points (cor). This plot pertains to chapter 3.



**A.**



**B.**



**C.**

Figure S2: The effect of the position of a study area along environmental gradients A-C on model accuracy as well as its impact on the effect of extent on model accuracy. A. Mean Elevation. B. Latitude. C. Mean of mean annual temperature. This plot pertains to chapter 3.

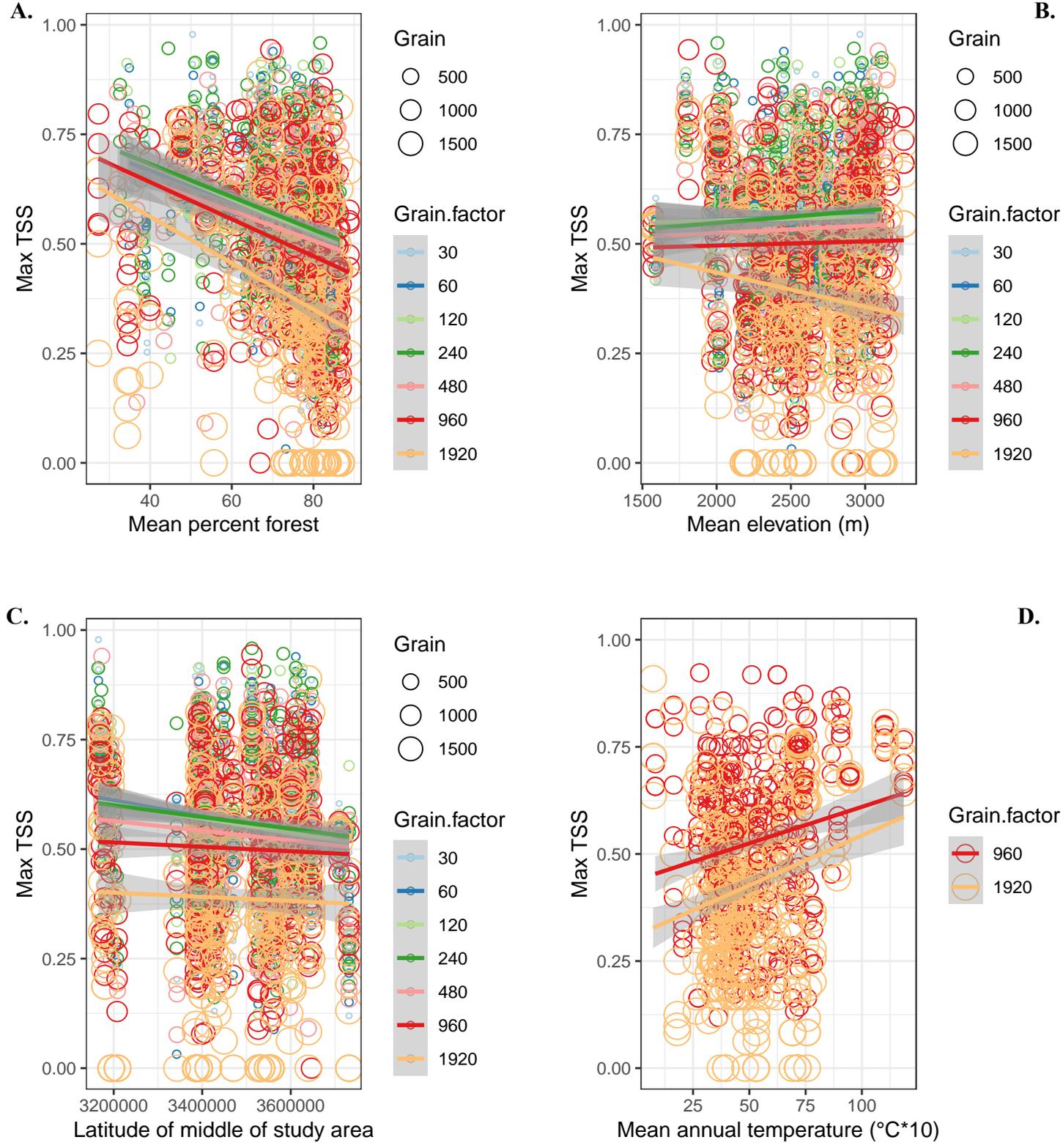


Figure S3: The effect of the position of a study area along environmental gradients A-D on model accuracy as well as its impact on the effect of grain size on model accuracy. A. Mean percent forest cover. B. Mean Elevation. C. Latitude. D. Mean of mean annual temperature. This plot pertains to chapter 3.

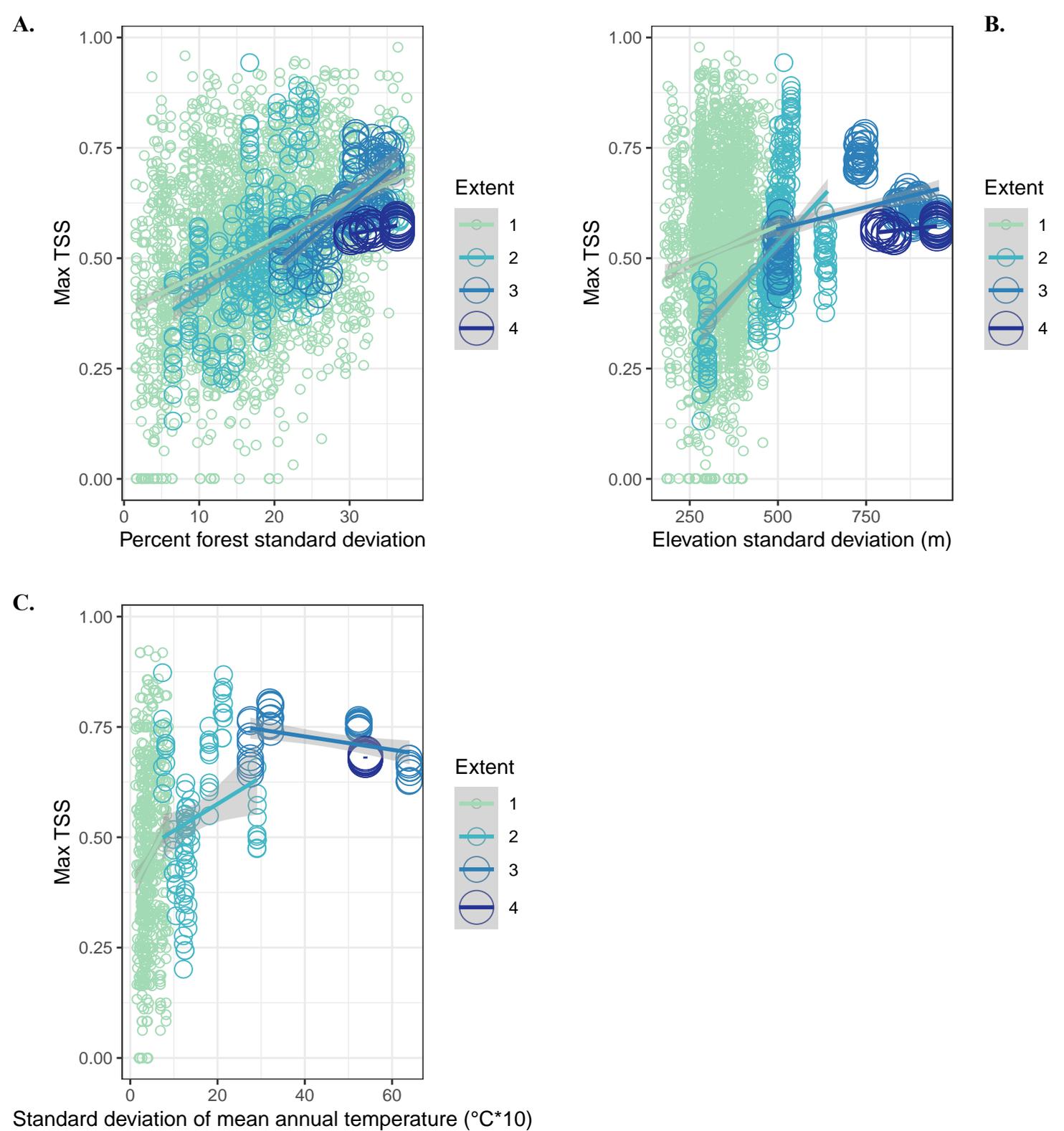


Figure S4: The effect of environmental heterogeneity within a study area on model accuracy as well as its impact on the effect of extent on model accuracy. A. Standard deviation of % forest cover. B. Standard deviation of elevation. C. Standard deviation of mean annual temperature. This plot pertains to chapter 3.

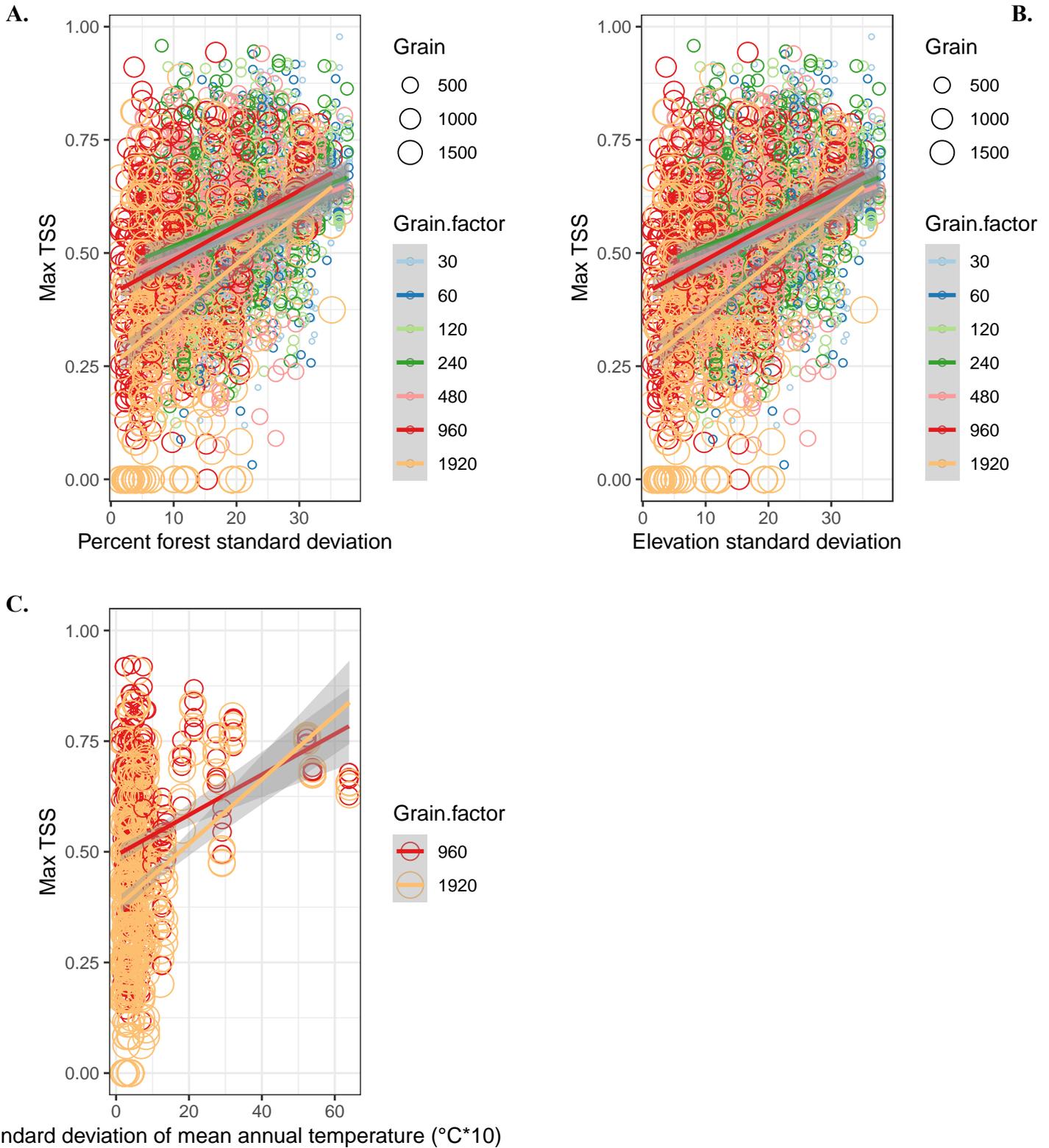
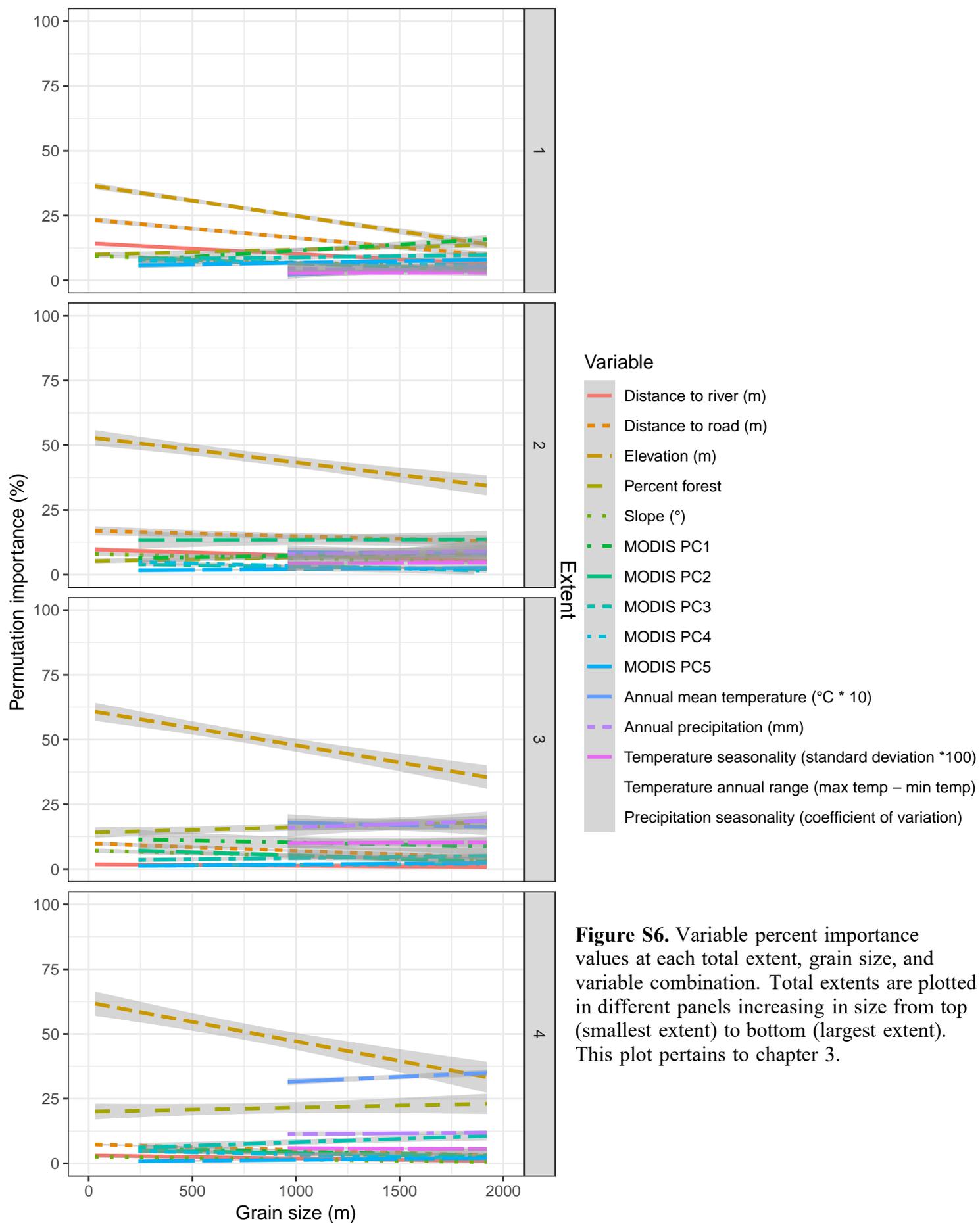


Figure S5: The effect of environmental heterogeneity within a study area on model accuracy as well as its impact on the effect of grain size on model accuracy. A. Standard deviation of % forest cover. B. Standard deviation of elevation. C. Standard deviation of mean annual temperature. This plot pertains to chapter 3.

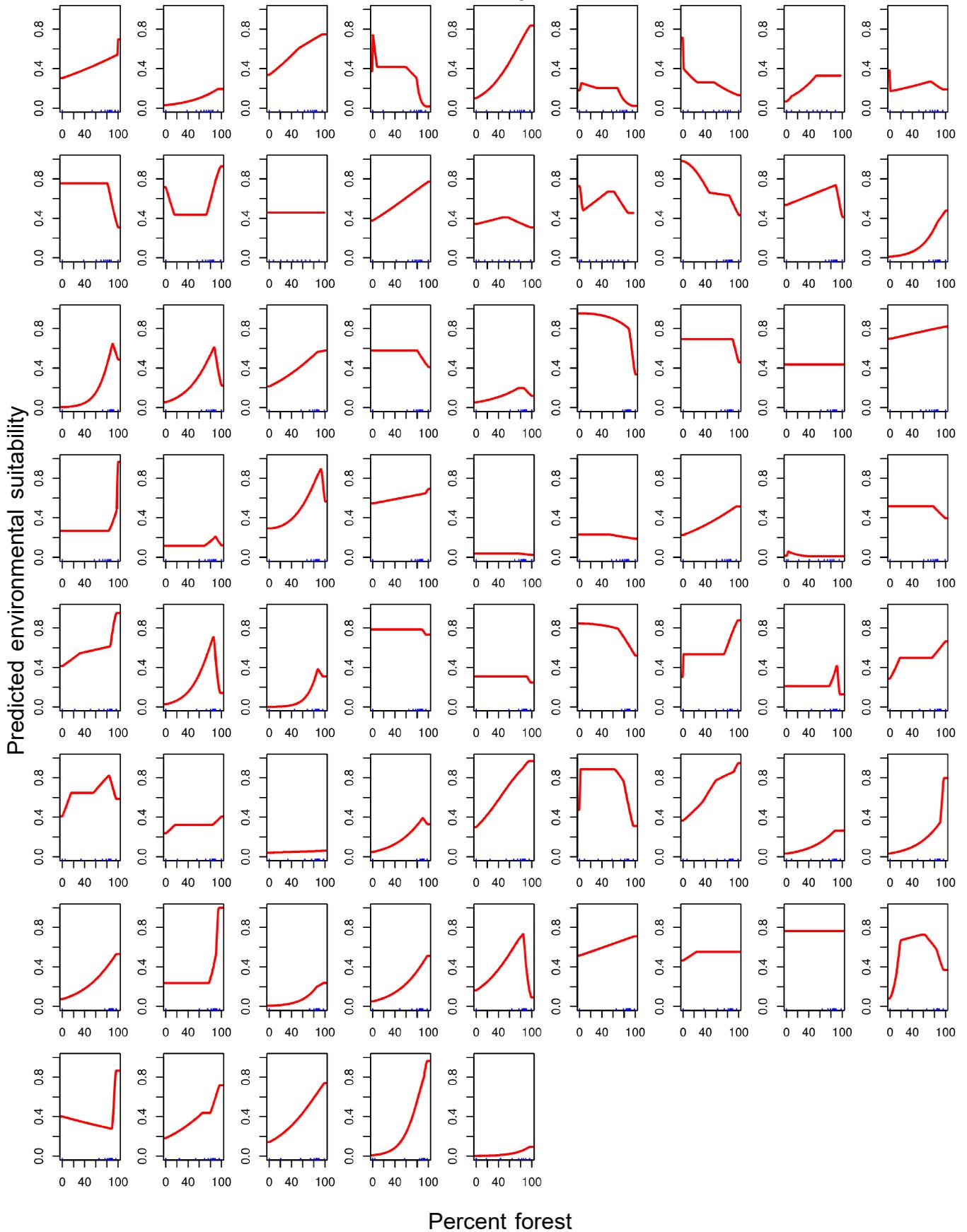


**Figure S6.** Variable percent importance values at each total extent, grain size, and variable combination. Total extents are plotted in different panels increasing in size from top (smallest extent) to bottom (largest extent). This plot pertains to chapter 3.

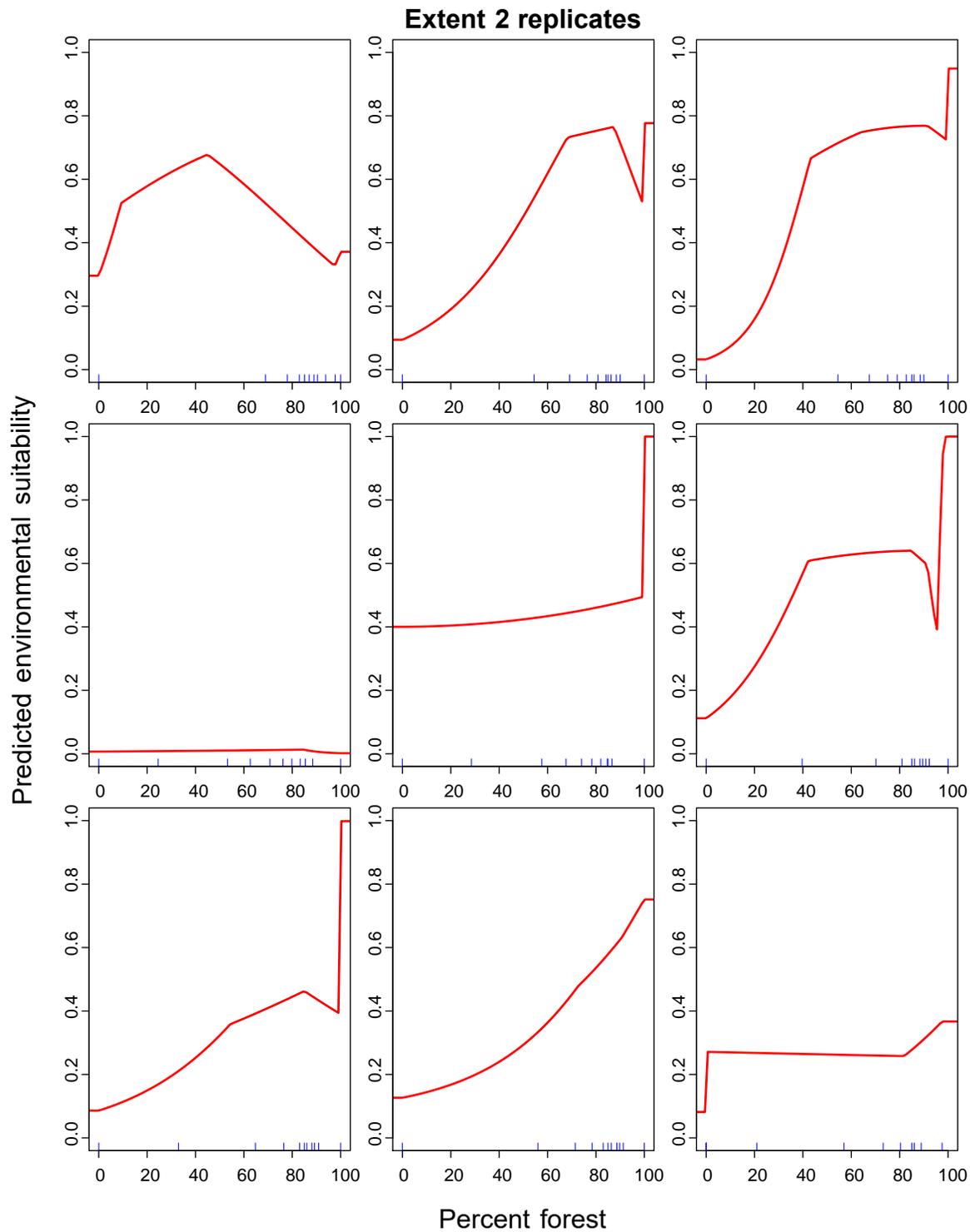
Figure S7. The following pages contain environmental suitability response plots to percent forest cover (0-100%) derived from models trained with the base variable set at A. every total extent 1 replicate, B. every total extent 2 replicate, C. every total extent 3 replicate, and D. total extent 4. These plots pertain to chapter 3.

Fig. 7A

Extent 1 replicates



**Fig. S7B**



**Fig. S7C**

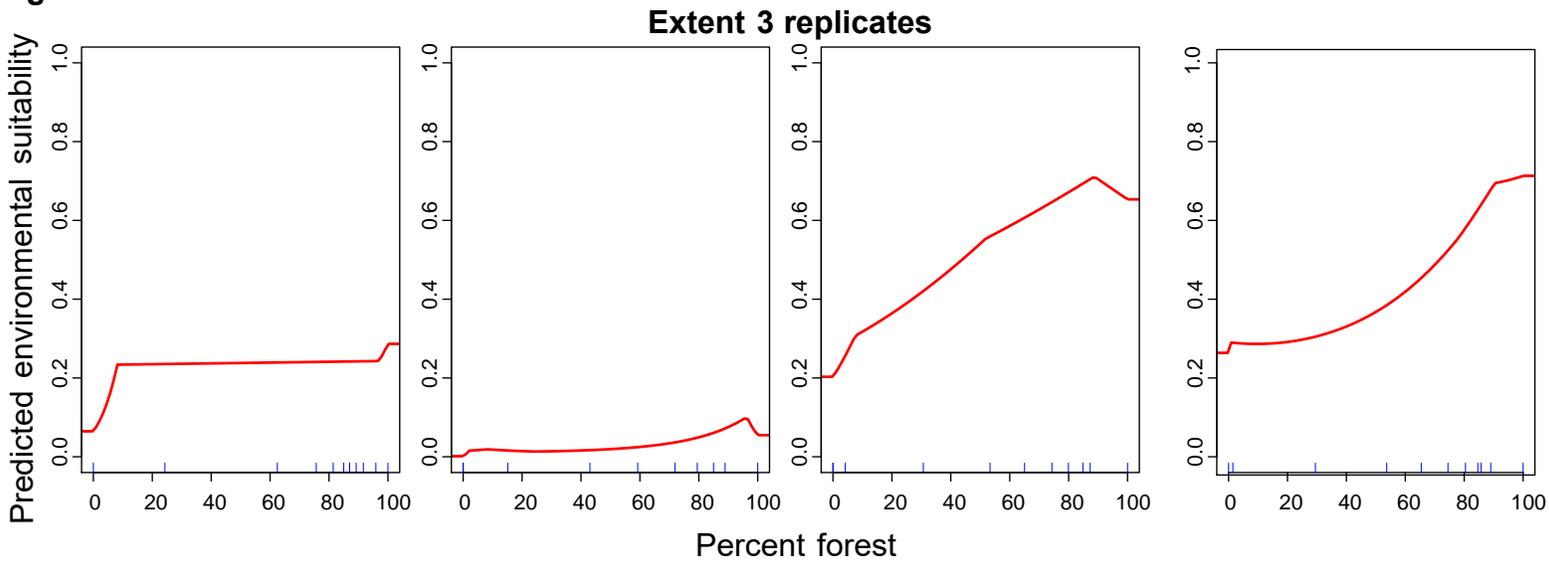


Fig. S7D

Extent 4

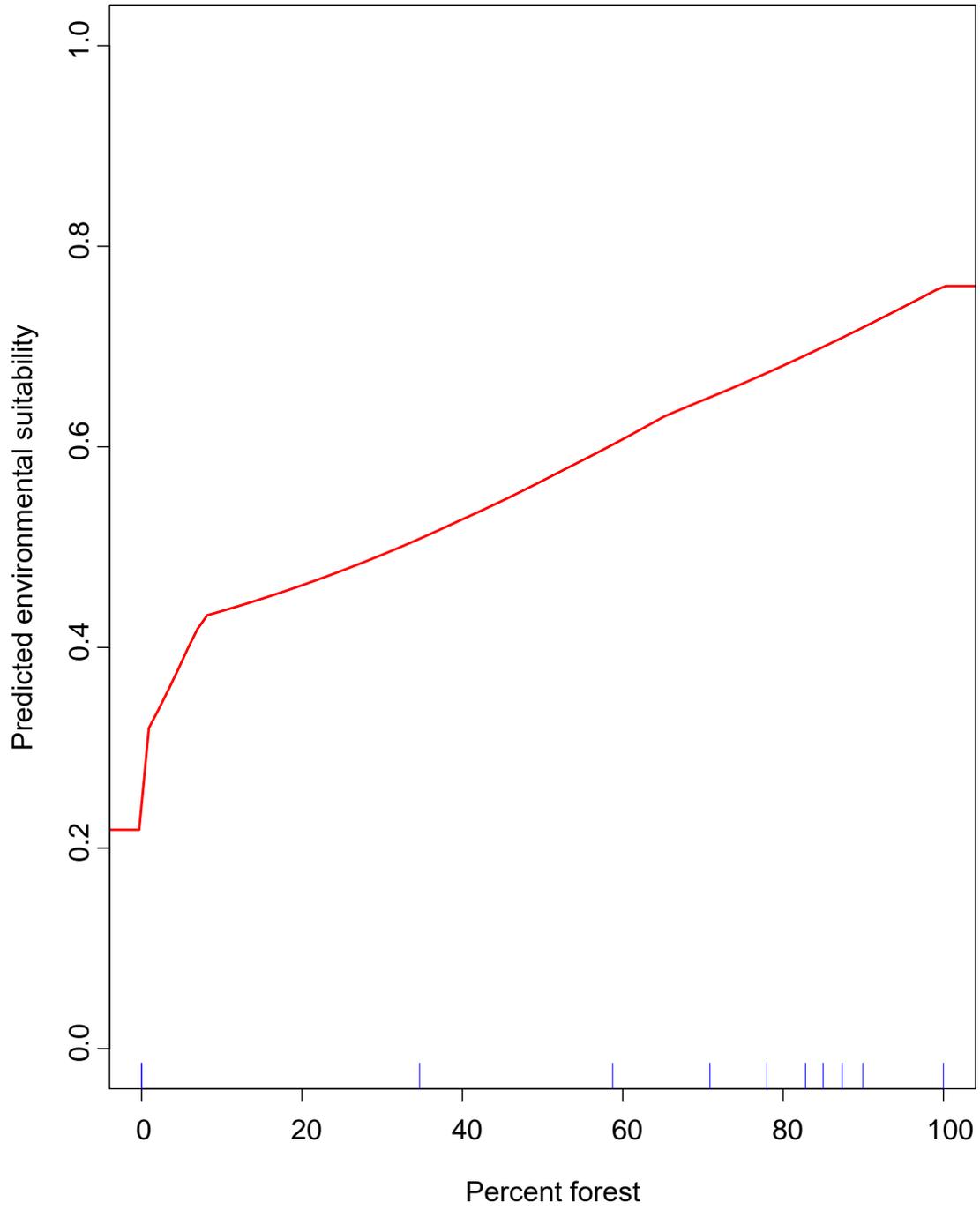
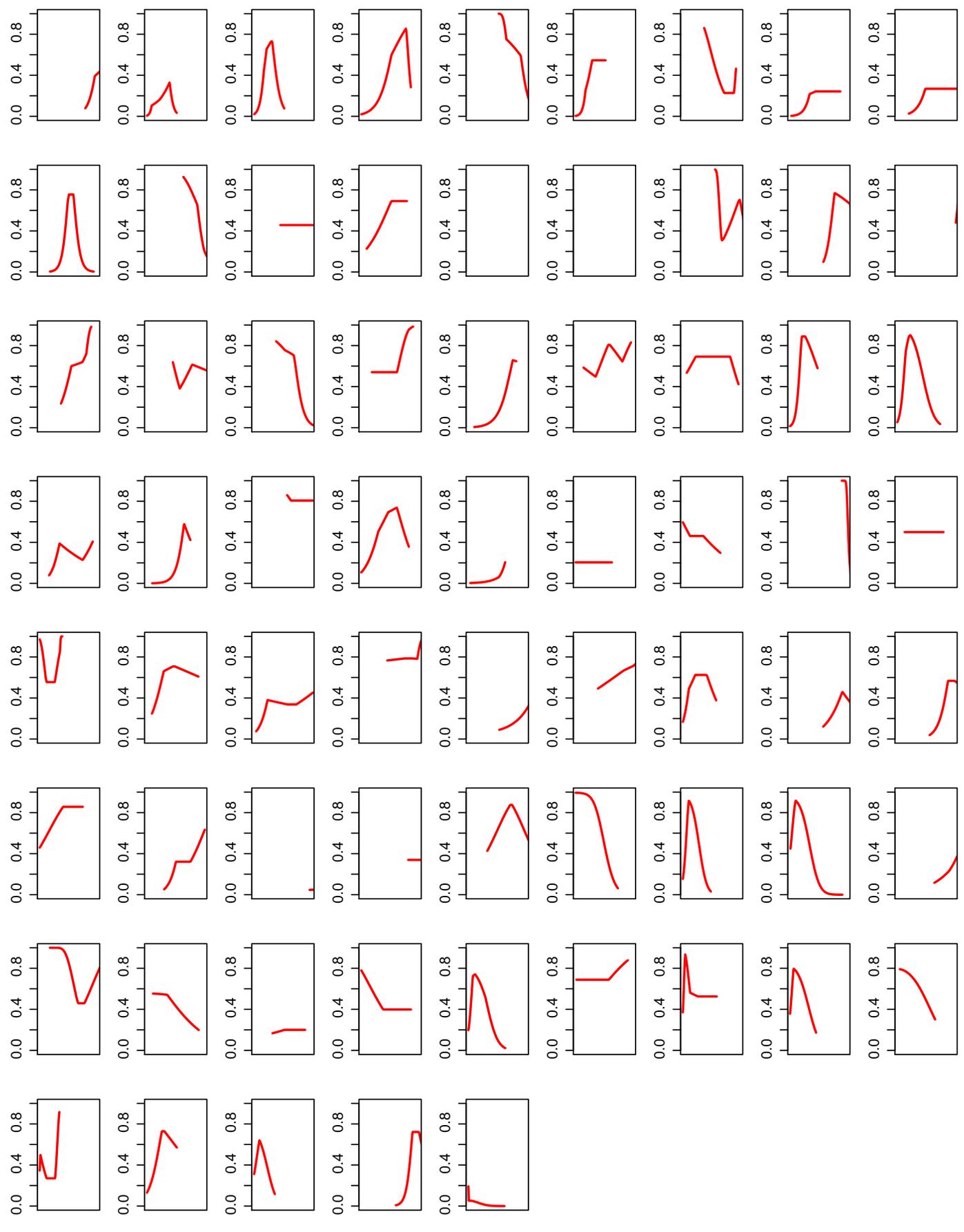


Figure S8. The following pages contain environmental suitability response plots to increasing distances to roads (0-10000m) derived from models trained with the base variable set at A. every total extent 1 replicate, B. every total extent 2 replicate, C. every total extent 3 replicate, and D. total extent 4. These plots pertain to chapter 3.

Fig. S8A

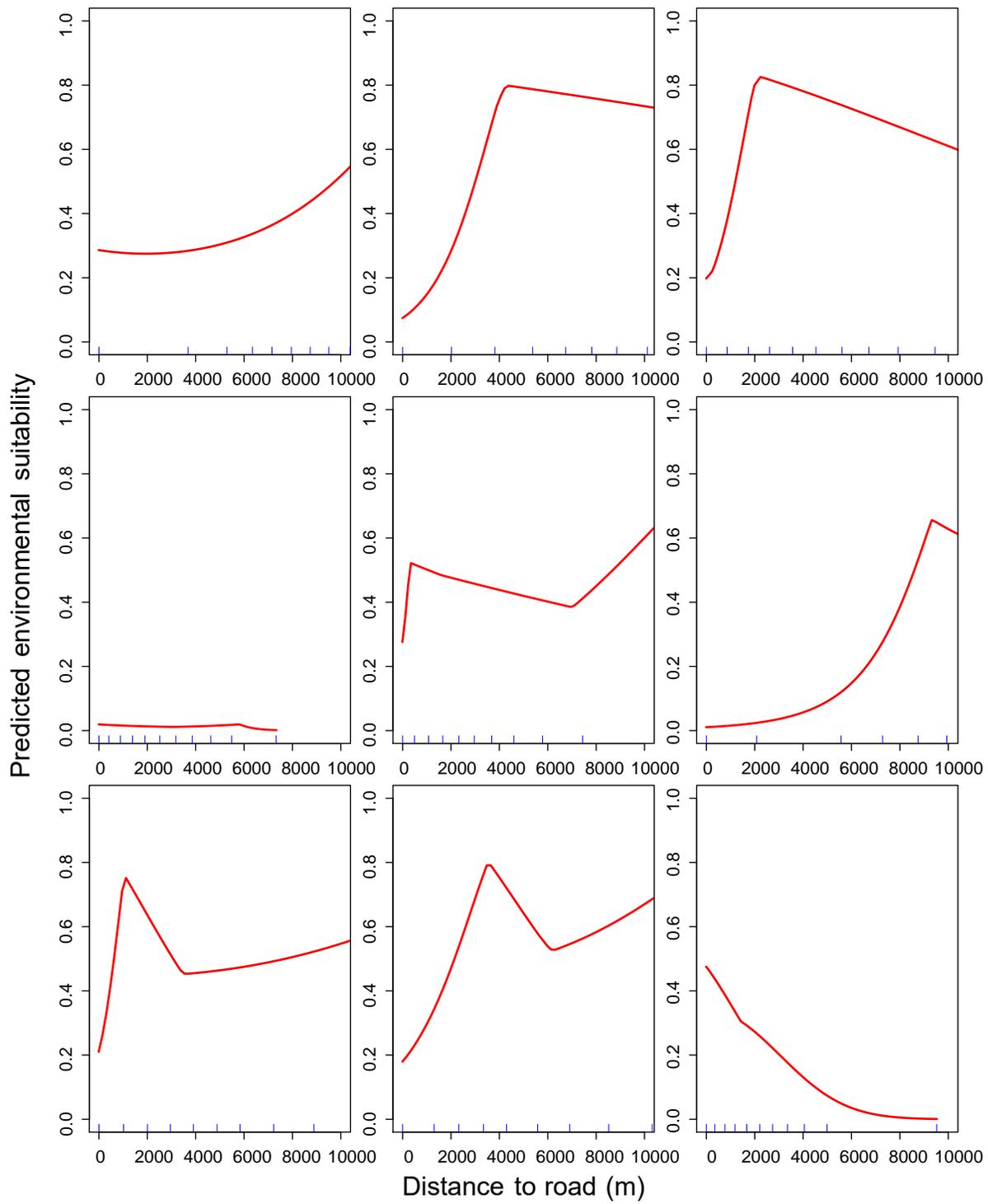
Extent 1 replicates

Predicted environmental suitability



Distance to road (0-10000 m)

**Fig. S8B**



**Fig. S8C**

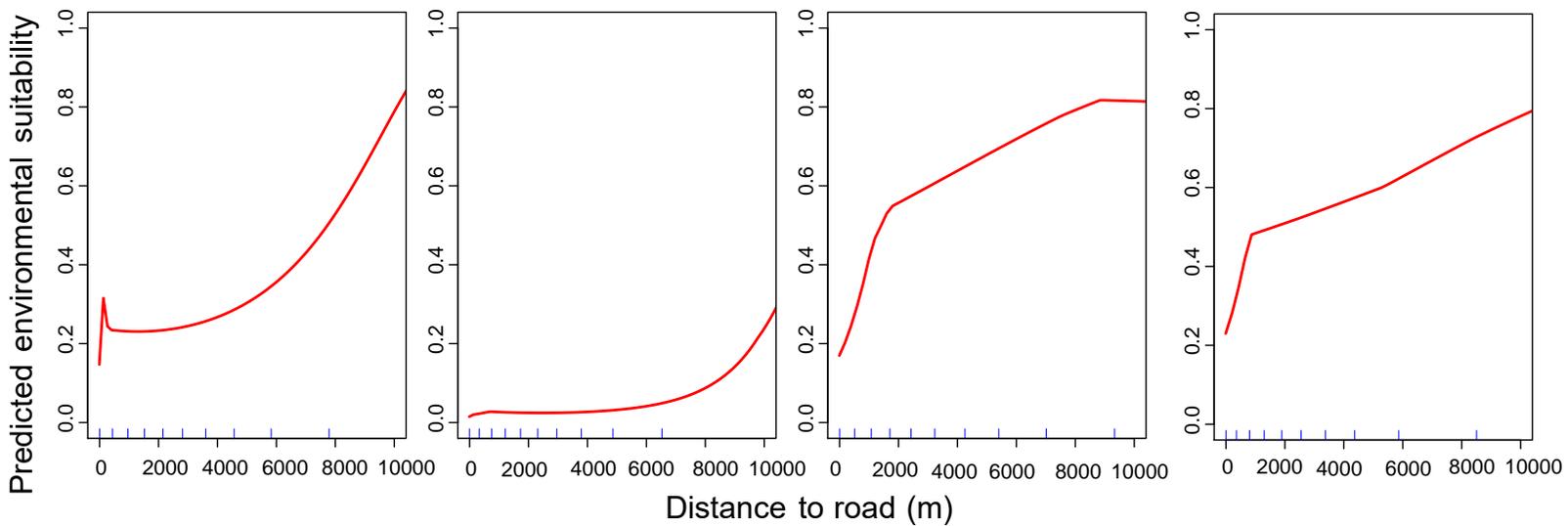


Fig. S8D

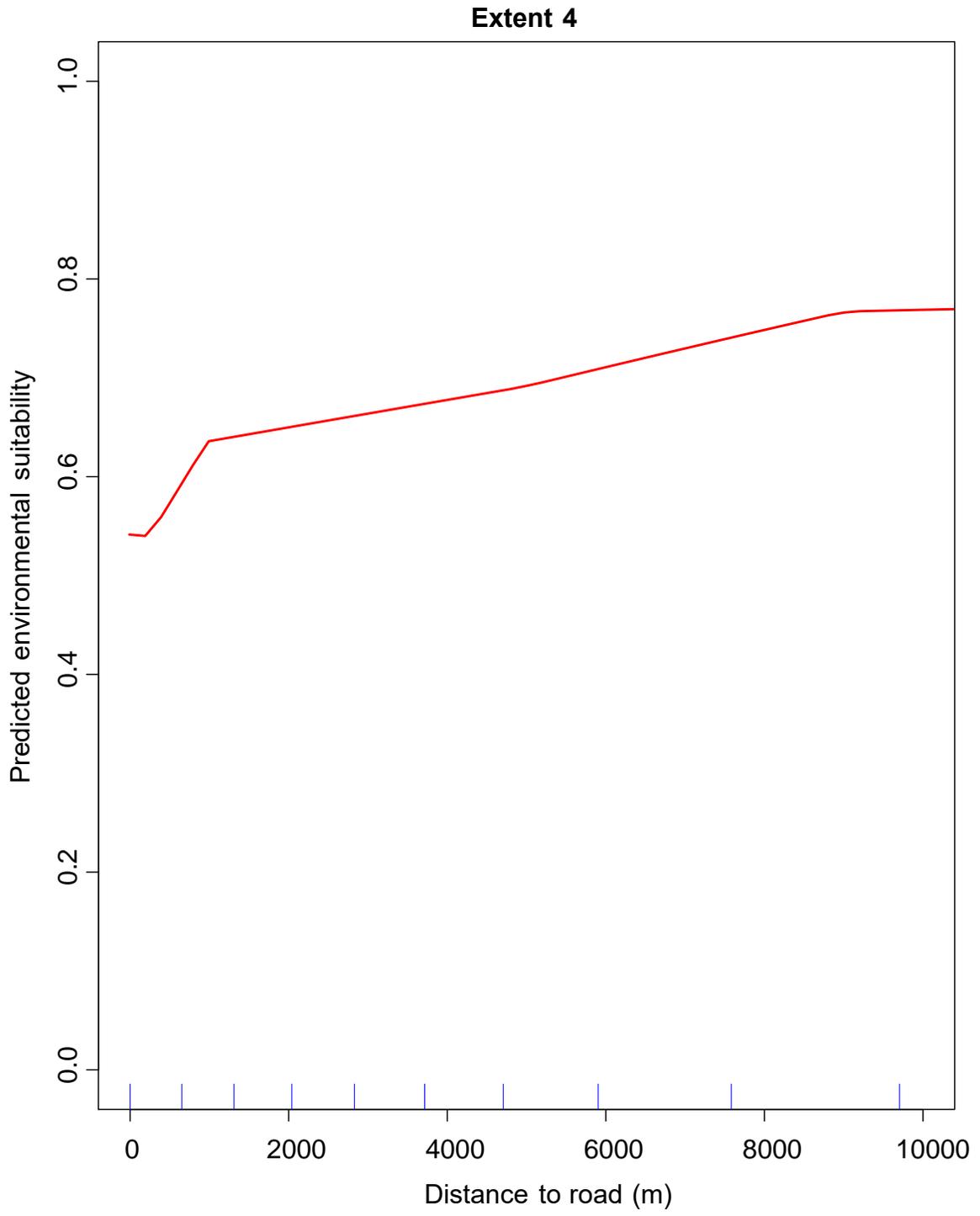
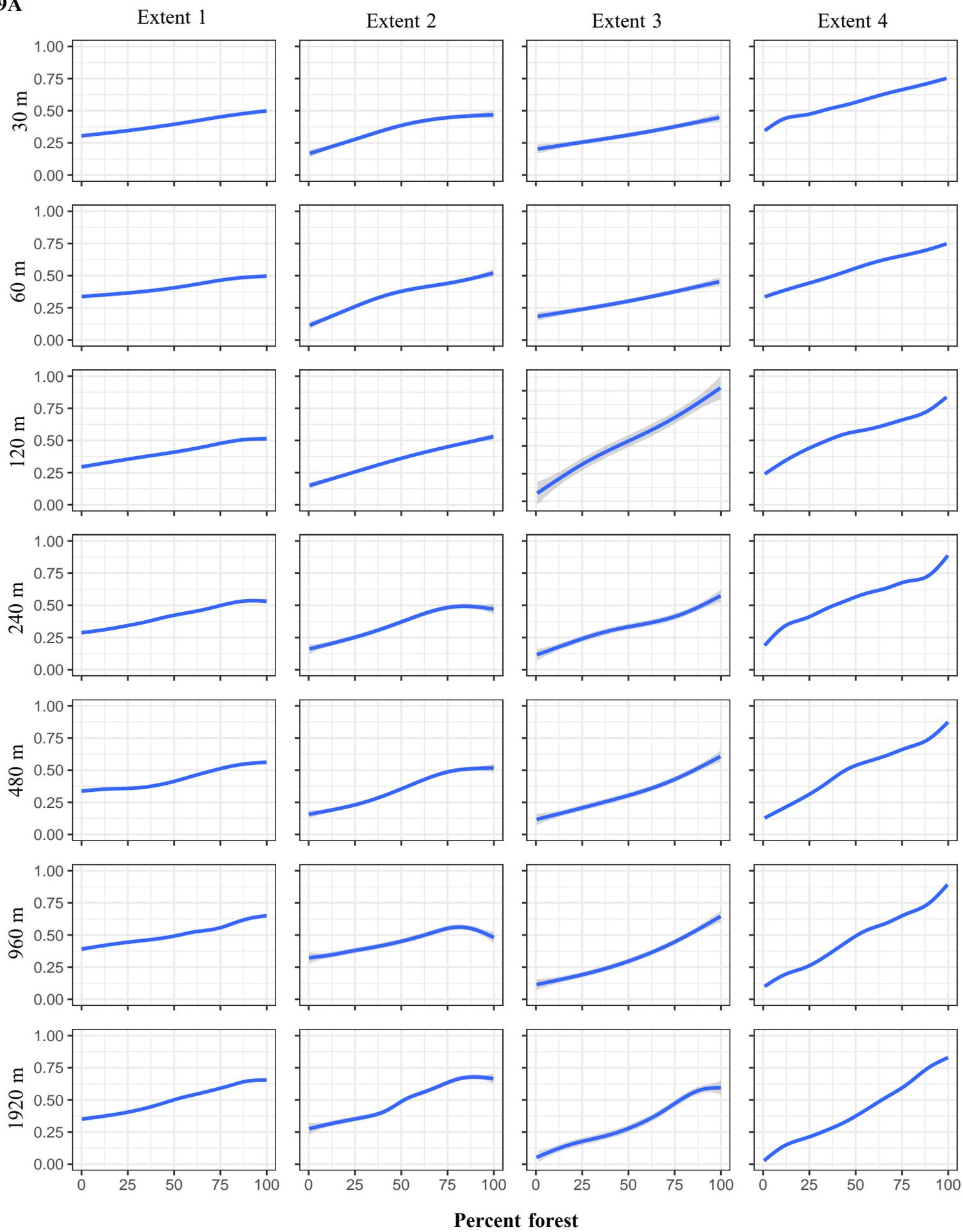
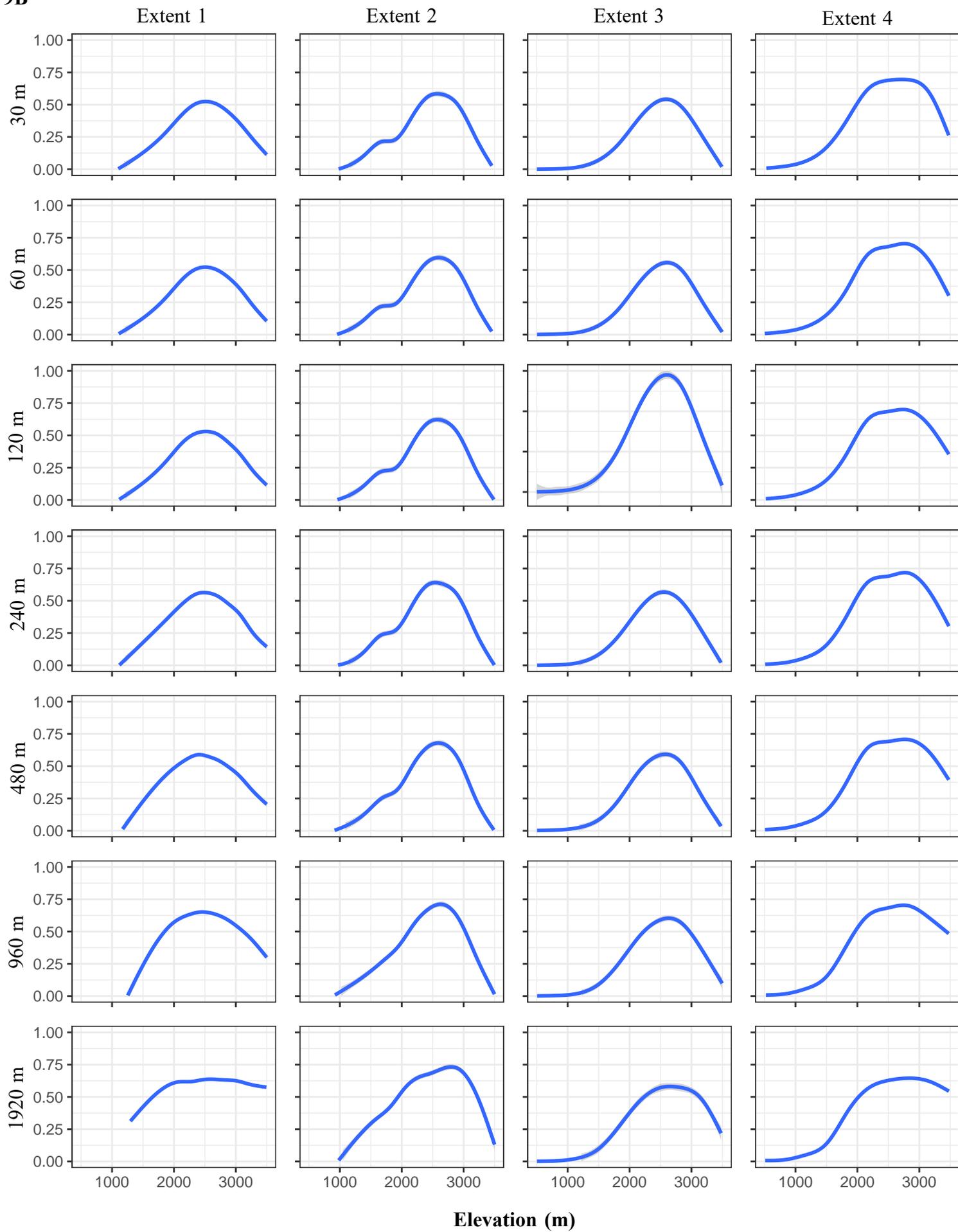


Figure S9. The following pages contain environmental suitability response plots of models trained at increasing total extents and with increasing grain size to A. percent forest and B. elevation. Response plots are averages of every study area replicate at each total extent, and shaded areas are the 95% confidence interval around those averages. These plots pertain to chapter 3.

**Fig 9A**

**Fig. 9B**

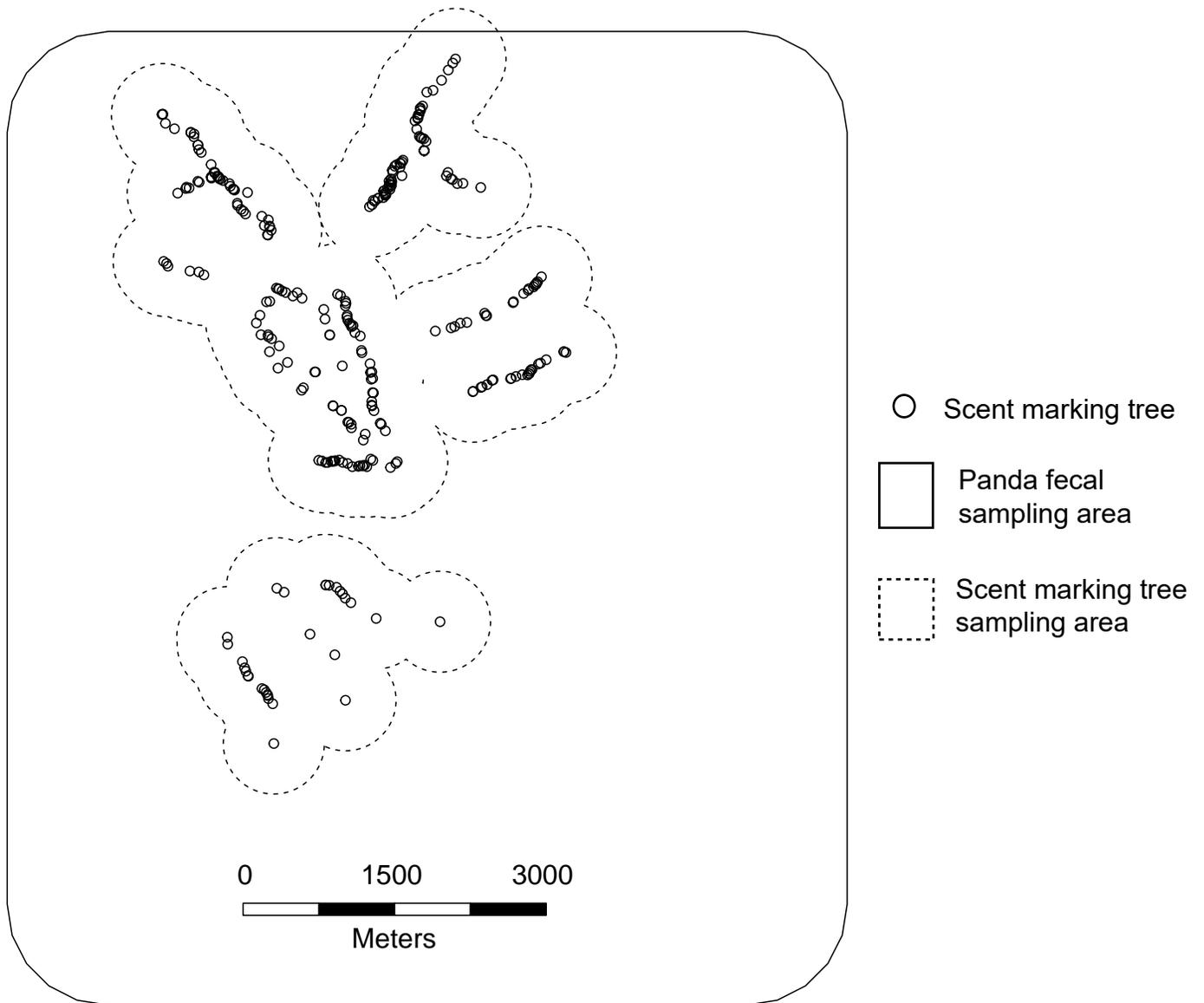


Figure S10. Scent marking tree locations within the area studied in chapter 5. These trees locations are not a result of exhaustive sampling - efforts were focused along ridges within the dotted-line polygons in the figure. The density and spread of trees suggests that scent marking behavior is widespread in the study area.



Figure S11. A typical scent marking tree in panda habitat. The tree is stained a dark green from a waxy substance secreted from panda anogenital glands. This plot pertains to chapter 5.

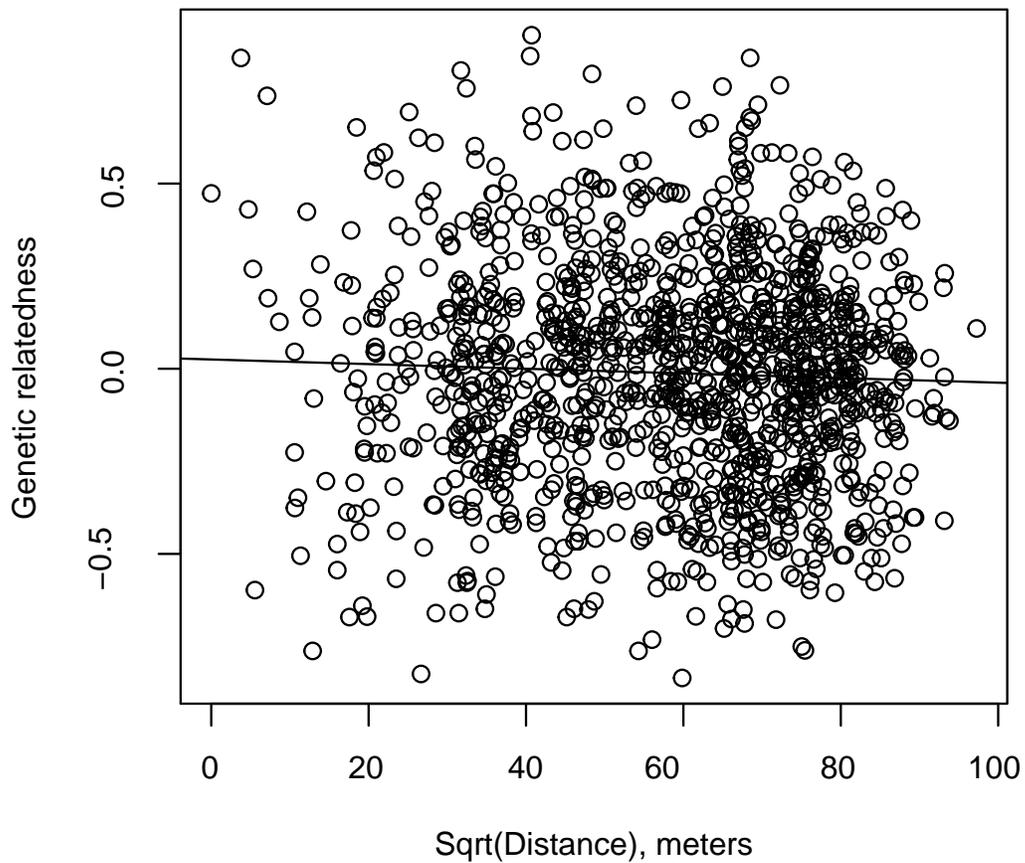


Figure S12. A scatter plot comparing genetic relatedness estimates (from Wang 's (2002) estimator, see main text) with the square root of the distance between activity centers of panda individuals sampled in chapter 5. A linear regression line shows a slope near 0, and the correlation between the two was just -0.04, indicating minimal spatial genetic structure within our study area. This plot pertains to chapter 5.