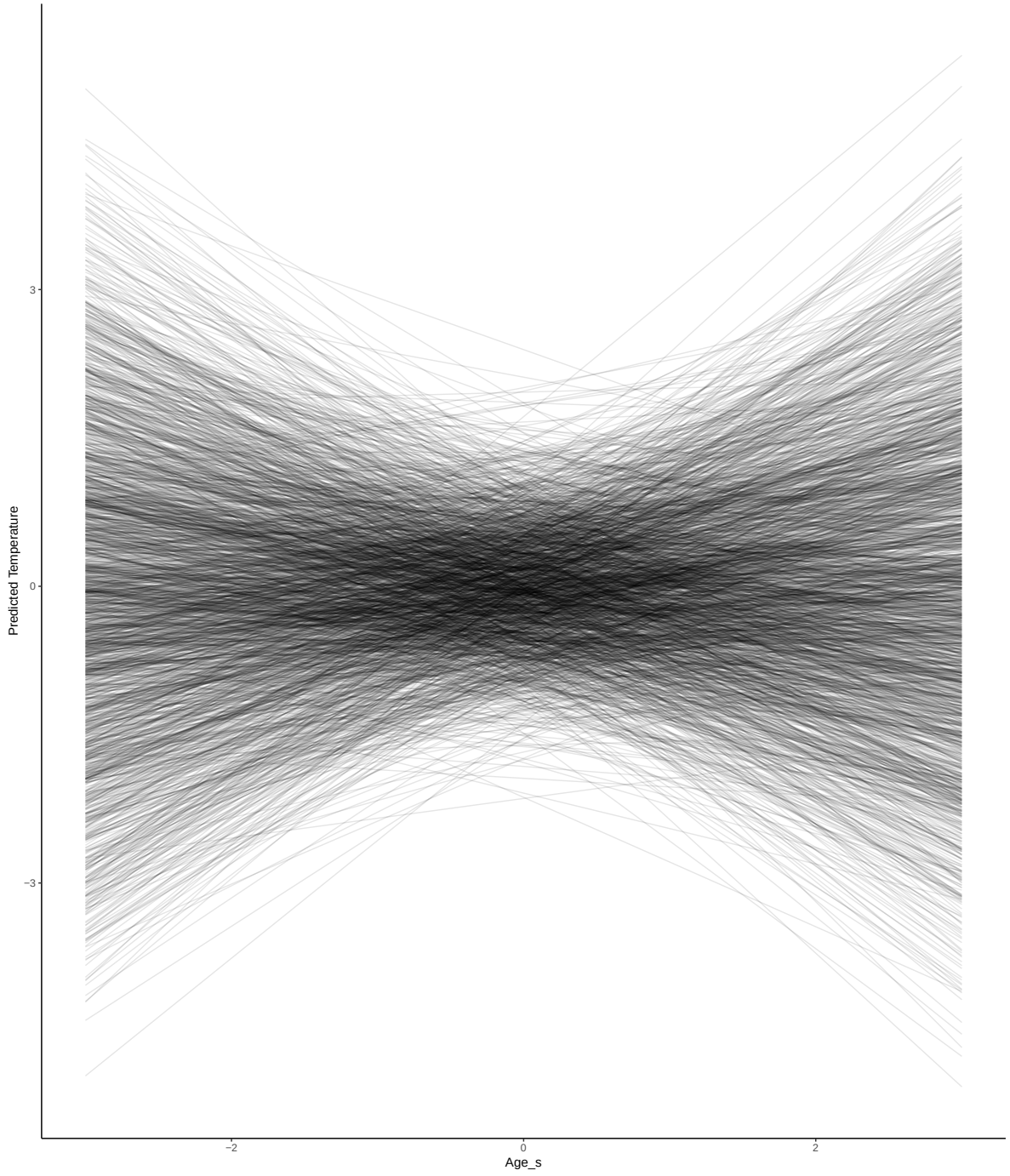
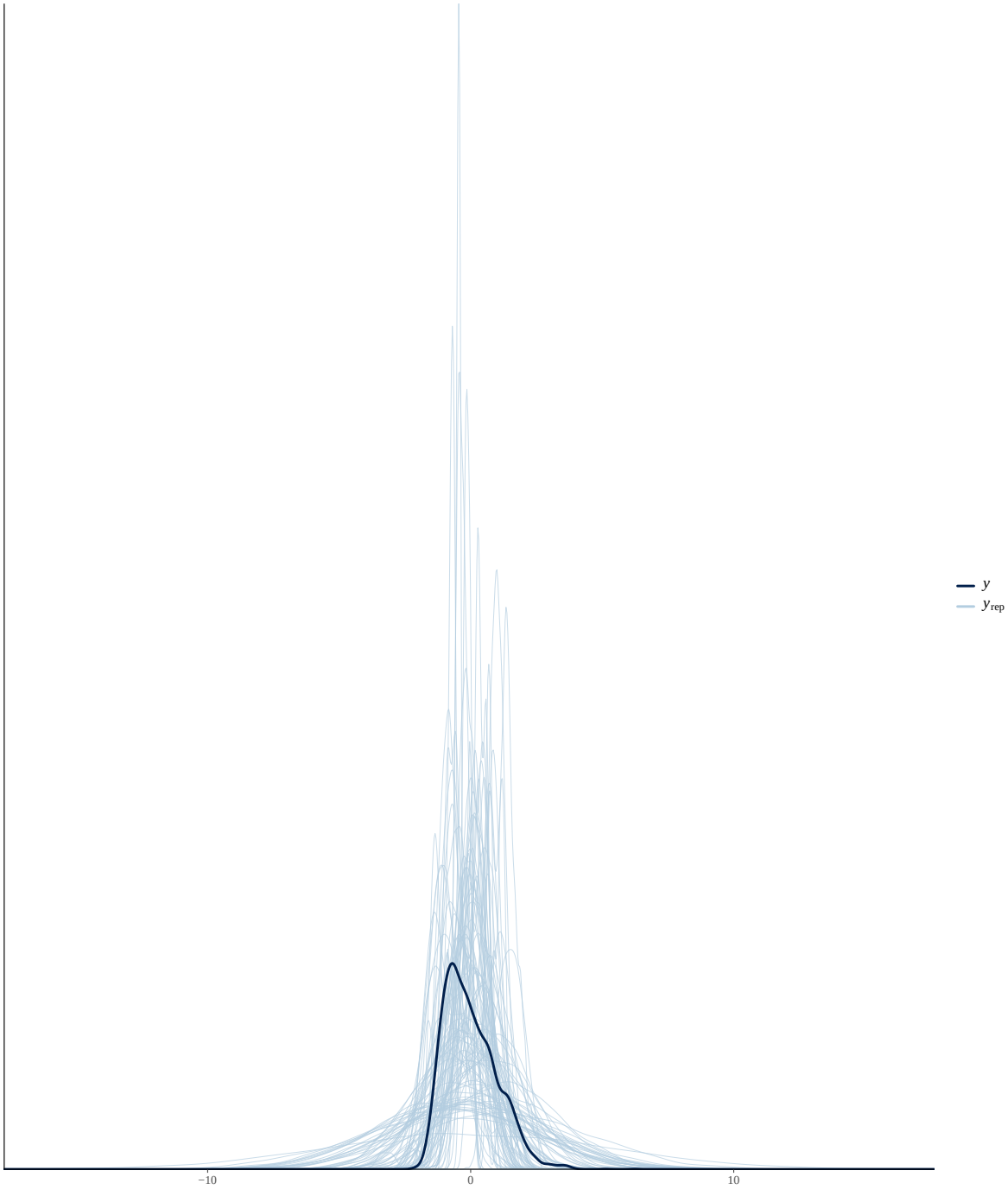
Prior Predictive Checks

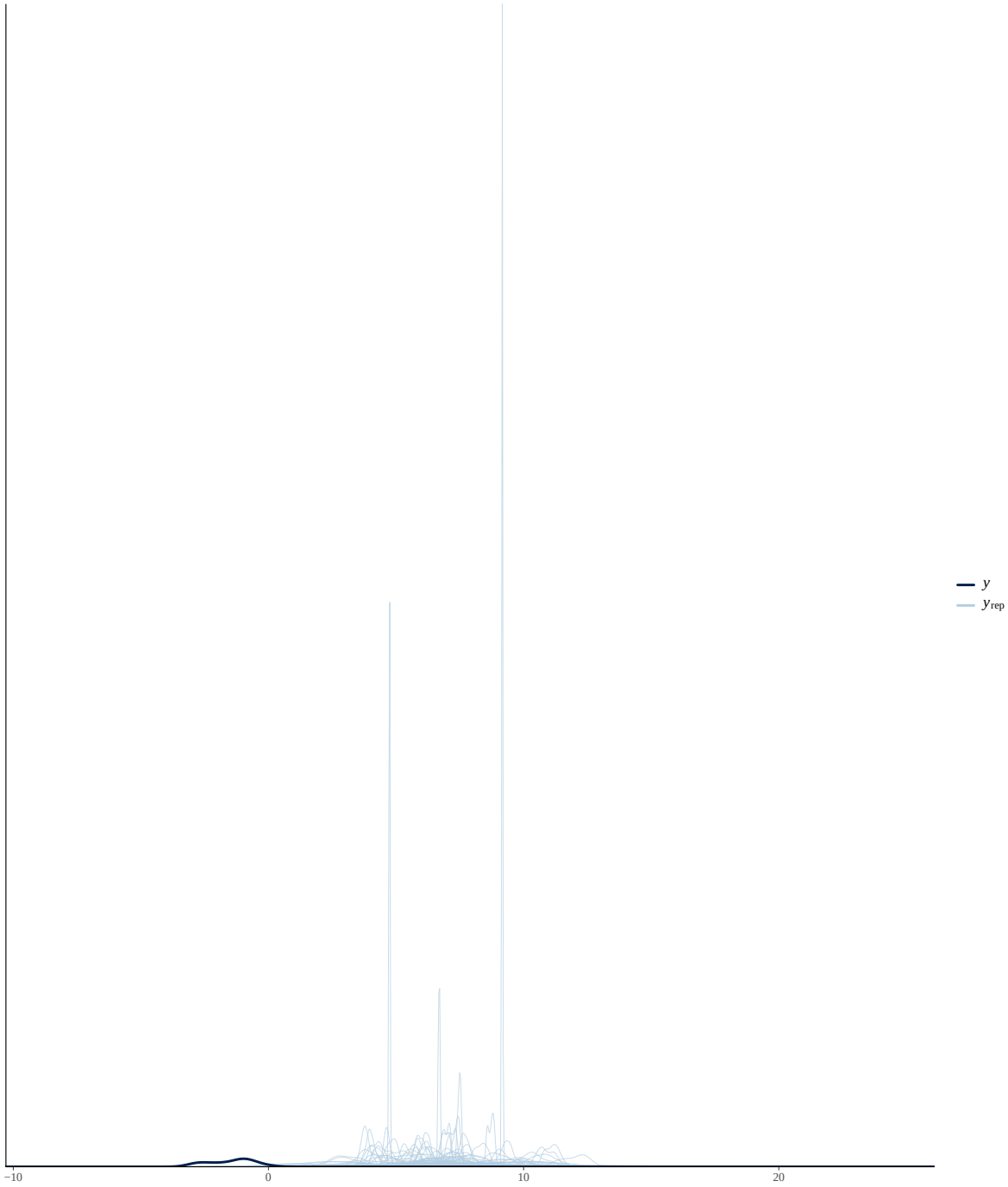
Prior predictive checks are used to ensure that the values selected for priors for our models allow a biologically reasonable range of values. For models with fixed effects fit to the model (models 1 and 5), we simulate predictive draws for prior only models and visualize the slope/intercept of the values. We then do a "posterior predictive check" but with the prior only model, to see if the data is captured in the priors. For models with only random effects, we only use the posterior predictive check.

Model 1: Total Effect of Past Land-Use on Temperature

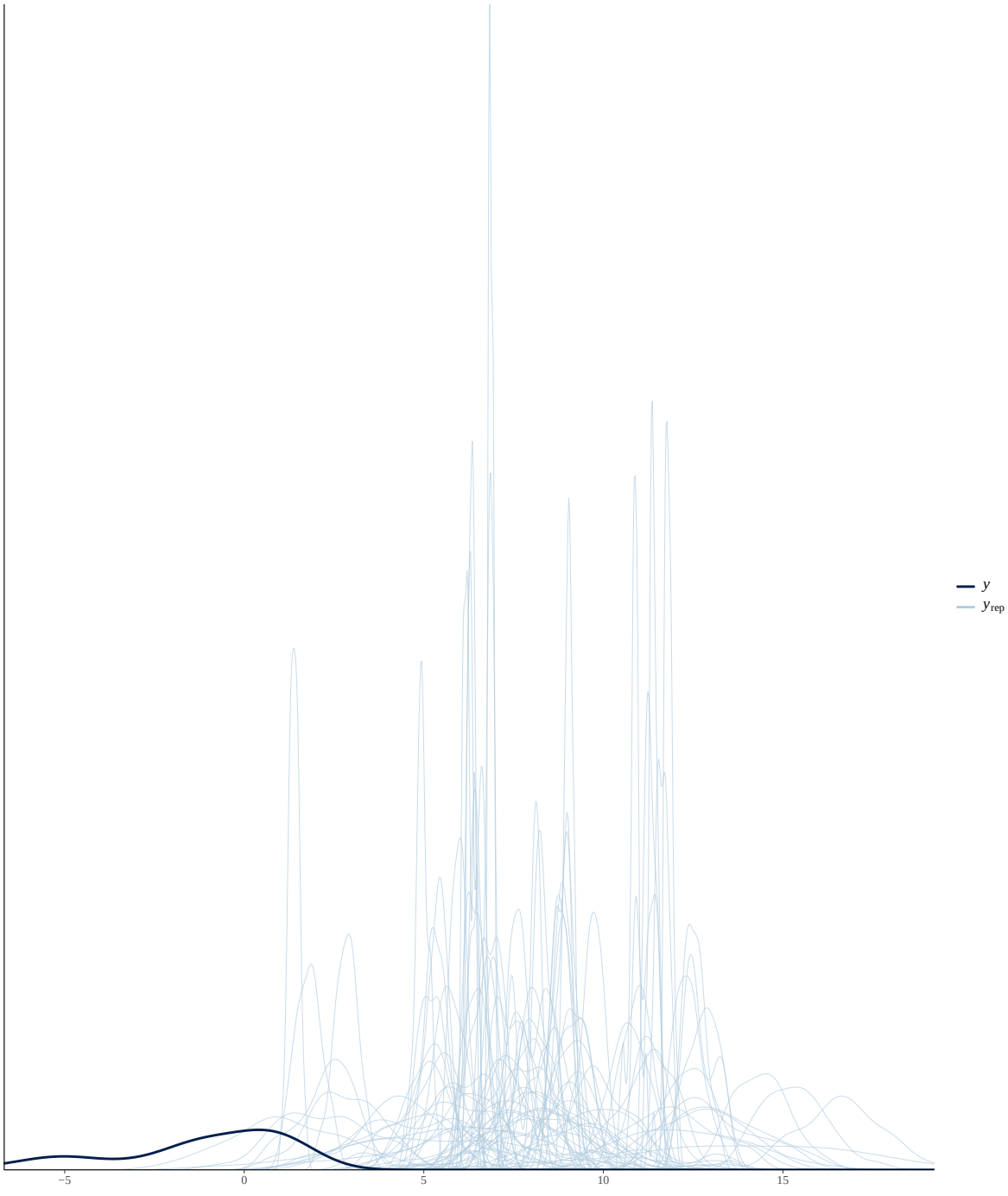



y
y_rep
−10
0
10

Model 2a: Direct Effect of Past Land-Use on Large Tree (>= 5 cm DBH) Density



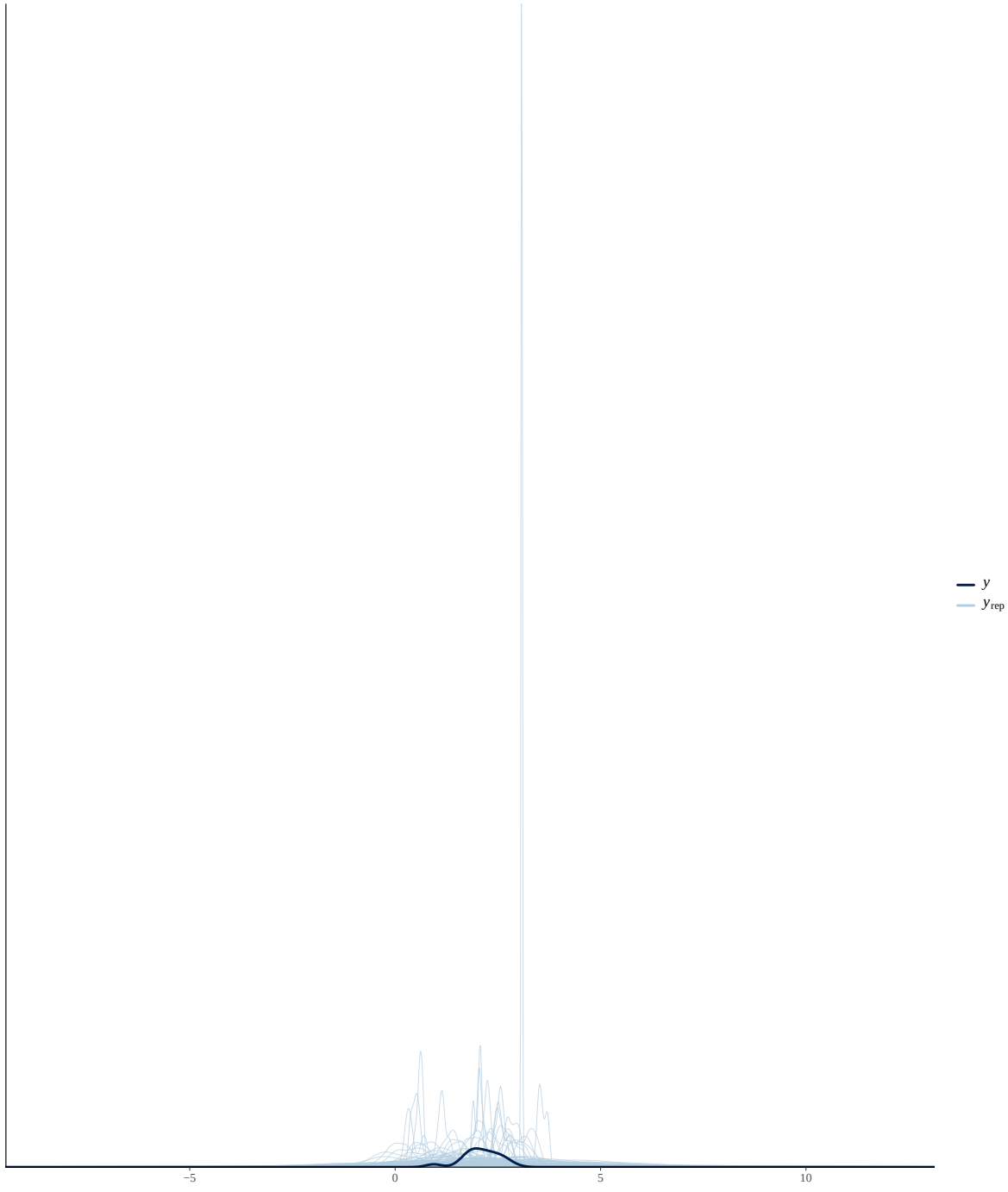
Model 2b: Direct Effect of Past Land-Use on Small Tree ($<$ 5 cm DBH) Density



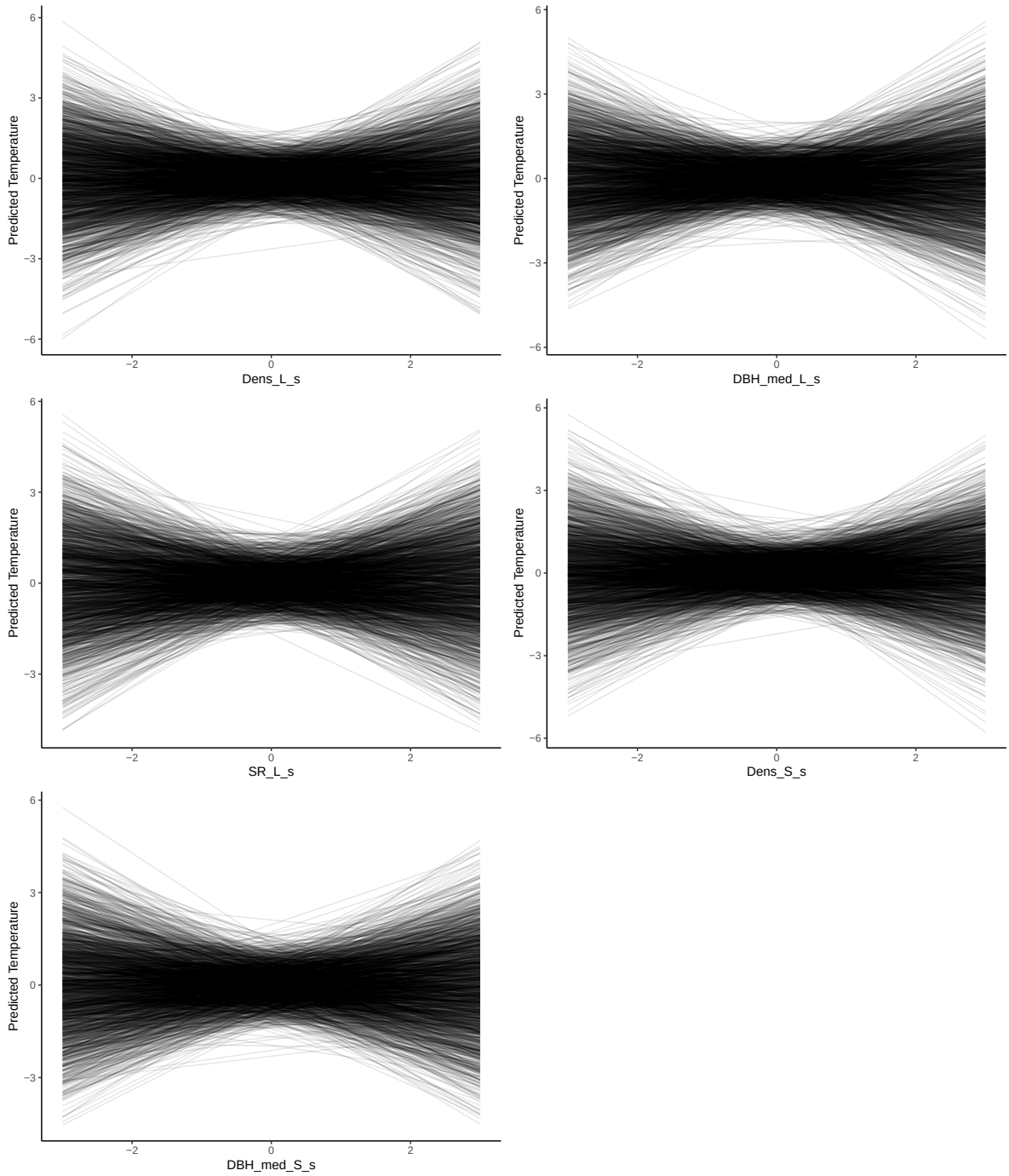
Model 3a: Direct Effect of Past Land-Use on Large Tree (>= 5 cm DBH) Density

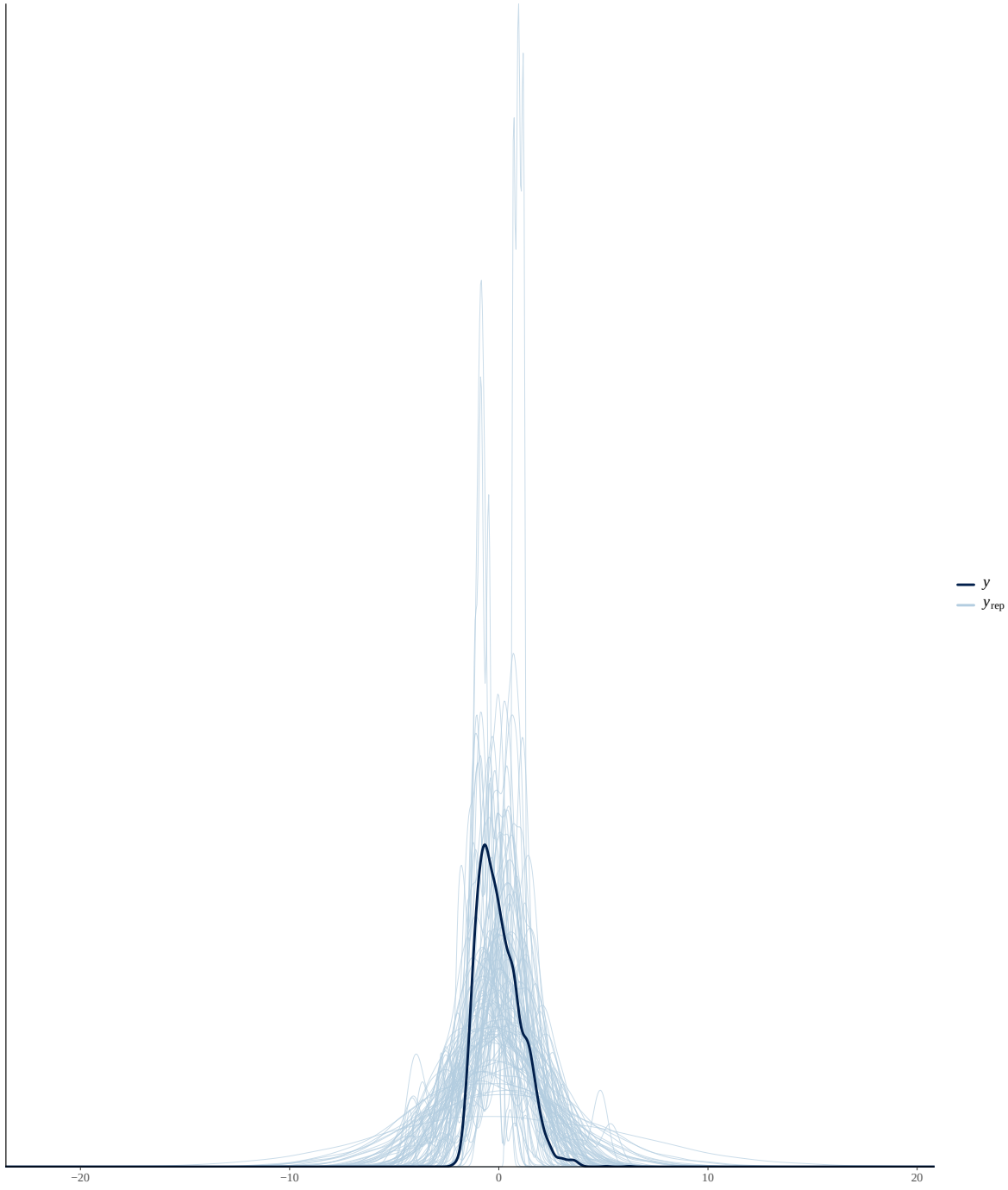
Model 3b: Direct Effect of Past Land-Use on Small Tree ($<$ 5 cm DBH) Density

Model 4: Direct Effect of Past Land-Use on Large Tree (>= 5 cm DBH) Species Richness



Model 5: Direct Effect of Forest Composition on Temperature




y
y rep
−20
−10
0
10
20