

Figure S1. Comparison of mammal and bird species richness generated in our research and that generated based on range maps from the International Union for Conservation of Nature (mammals), and BirdLife International (birds). (a) Comparison of mammal species; (b) Comparison of bird species.

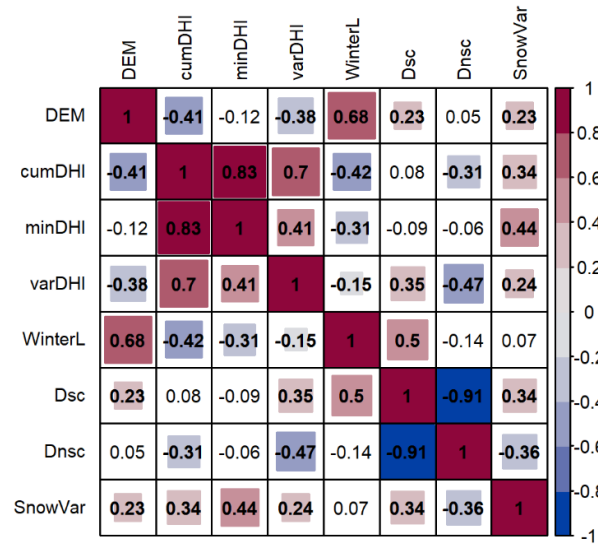


Figure S2. Correlations between winter habitat indices and dynamic habitat indices. cumDHI: cumulative DHI; minDHI: minimum DHI; varDHI: variability DHI; WinterL: winter season length; Dsc: snow cover duration; Dnsc: frequency of snow-free frozen ground; SnowVar: snow variability.

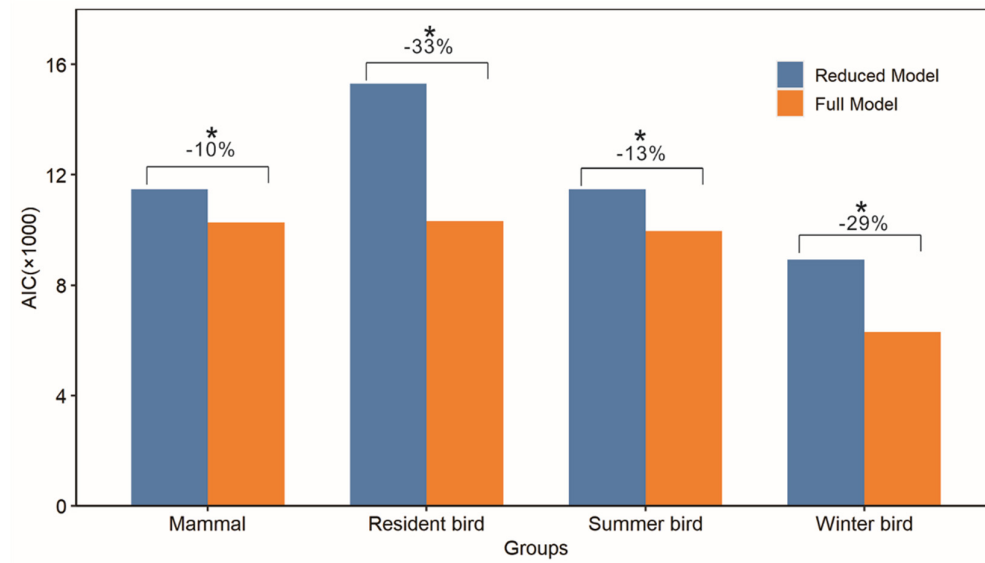


Figure S3. Comparison of explanatory power between full models with winter habitat indices and reduced models. The formula of full model with winter habitat indices is: richness~dem+cumDHI+minDHI+varDHI+WinterL+Dnsc+SnowVar); the reduced model without winter habitat indices is: richness~dem+cumDHI+minDHI+varDHI). The goodness of fit is measured by AIC calculated based on generalized linear model. The ANOVA method is used to compare two model, and the “*” sign indicates that full model shows a significant increase in the explanatory power according to the chi-squared test. Remotely sensing winter habitat indices increase the goodness of fit for models of all groups.