Supplementary Figure 1. Maps of residual phylogenetic diversity (PD) for all terrestrial vertebrate clades.

Supplementary Figure 2. Violin plots of recent speciation (DR) rates in the different focal areas identified as centers of high and low residual PD for all terrestrial vertebrate clades.

Supplementary Figure 3. Pairwise differences in DR rates (effect size Z) between specific regions of high and low residual PD, colored by taxa group. Left: differences between pairs of regions of low residual PD. Center: differences between regions of high residual PD and regions of low residual PD. Right: differences between pairs of regions of high residual PD.

Supplementary Figure 4. Lineage-through-time (LTT) plots for amphibian lineages in the different focal regions of low (in blue) and high (in red) residual PD.

Supplementary Figure 5. Lineage-through-time (LTT) plots for bird lineages in the different focal regions of low (in blue) and high (in red) residual PD.

Supplementary Figure 6. Lineage-through-time (LTT) plots for mammal lineages in the different focal regions of low (in blue) and high (in red) residual PD.

Supplementary Figure 7. Lineage-through-time (LTT) plots for squamate lineages in the different focal regions of low (in blue) and high (in red) residual PD.

Supplementary Figure 8. Relationship of annual precipitation (in mm) with residual PD in all tetrapod clades.

Supplementary Figure 9. Relationship of mean temperature (in ºC) with residual PD in all tetrapod clades.

Supplementary Figure 10. Relationship of precipitation seasonality and residual PD in all tetrapod clades.

Supplementary Figure 11. Relationship of temperature seasonality and residual PD in all tetrapod clades.

Supplementary Figure 12. Relationship of net primary productivity (NPP) and residual PD in all tetrapod clades.

Supplementary Figure 13. Relationship of terrain roughness index (TRI; a measurement of topographic complexity) and residual PD in all tetrapod clades.

Supplementary Figure 14. Climatic space defined by precipitation seasonality and temperature seasonality for all tetrapod clades, showing the geographic grid cells with the 10% lowest (in blue) and highest (in red) residual PD.

Supplementary Figure 15. Climatic space defined by net primary productivity (NPP) and terrain roughness index (TRI) for all tetrapod clades, showing the geographic grid cells with the 10% lowest (in blue) and highest (in red) residual PD.

Supplementary Figure 16. Latitudinal pattern of species richness (in the X-axis) and residual PD (in the color gradient) for all tetrapod clades.