



The Late Triassic Latitudinal Biodiversity Gradient

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The latitudinal biodiversity gradient (LBG), the increase in species richness towards the equator, is one of the most widely recognised patterns in macroecology. This gradient has been extensively documented in modern terrestrial vertebrate faunas, yet the evolution and drivers of this gradient through time remain uncertain. The fossil record offers a deep time perspective on the LBG; however, previous studies have been hampered by uneven spatial and temporal sampling, particularly very poor sampling of low-latitude regions. The Late Triassic tetrapod fossil record provides a unique opportunity to study the LBG in deep time, as sampling in low- and mid-latitude regions during this interval has been extensive, and the climate and continental configuration were very different from today's. Here, we explore the relationships between Late Triassic tetrapod diversity, palaeolatitude, and climate using data from the Paleobiology Database, sampling standardisation, and tree-based biogeographic and character-mapping approaches. Results suggest that Late Triassic tetrapods do not conform to a modern-type LBD; instead diversity is higher at mid-latitudes than at low-latitudes. We also examine the distribution of major Late Triassic tetrapod groups (e.g. dinosaurs, temnospondyls, and pseudosuchians) and how this relates to global climate to uncover the drivers of spatial variation in global tetrapod diversity.