Appendix 1

Table 1: Differences between OTT and TNC regarding process and predicted patterns of NRI.

|  |  |  |  |
| --- | --- | --- | --- |
| **Hypothesis** | **Proposed patterns** | **Predictions** | **References** |
| Tropical Niche Conservatism (TNC) | * Tropical origins of major groups of organisms; only few species could evolve adaptations to invade and persist in freezing temperatures, implying that species are endemic and clustered phylogeneticallyin temperate biomes | Values of NRI are positive in temperate zones because only few ancestors arrived | (Wiens and Donoghue 2004, Jansson et al. 2013, Duchêne and Cardillo 2015) |
| * The dispersal event to temperate biomes is recent because during the Eocene-Oligocene Climate Transition (around 34 Ma) the average temperatures in high latitudes dropped by around 5º C (Liu et al. 2009), as a consequence of that permitted the emergence of new large areas with a temperate climate and then the dispersal of tropical lineages to temperate biomes | Values of age of assemblage will be younger in temperate assemblages | (Wiens and Donoghue 2004, Jansson et al. 2013, Duchêne and Cardillo 2015) |
| Out of the Tropics (OTT) | Tropical biomes continually produce lineages and have a frequent net movement of species from tropical to temperate biomes and because that species would be less closely related and/or phylogenetically overdispersed in temperate biomes | Low value of NRI in biomes of temperate region | (Jablonski et al. 2006, Mittelbach et al. 2007, Jansson et al. 2013, Duchêne and Cardillo 2015) |

Appendix S2

Uma imagem contendo branco, pessoas, em pé, grupo

Descrição gerada automaticamente

Figure 3: Values of Net Relatedness Index (NRI) across assemblages at different latitudes. In the equator, we have the lowest value of NRI. After the latitude 23º (Red line) we have a predominance of positive values.