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PHYLOGENETIC DIVERSITY OF TREE COMMUNITIES ALONG DISTURBANCE GRADIENTS IN AMAZONIAN WHITE-WATER FLOODED FORESTS

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White-water floodplain forests (*várzeas*) are the most diverse waterlogged ecosystems along Amazon River. These forest systems have a decreasing pattern of taxonomic diversity from west (seasonal monthly flooding) to east (tidal daily flooding) associated with natural flooding disturbances (local habitat submergence conditions – less flooded high *várzea* and more flooded low *várzea*). Amazon human disturbance history may have influence in this context but it is not usually associated with this diversity pattern. The knowledge on whether these natural and human disturbance gradients leave an imprint on the phylogenetic diversity of tree communities is also missing. We used phylodiversity metrics (MPD, MNTD) of tree communities (DBH ≥ 10 cm) to access the role of natural (flooding systems and habitats) and human (anthropizantion index) disturbances in seven sites (40 plots of 25x25m each) across the main course of Amazon River. We found that both flooding and human gradients purely as well as their interaction influence phylogenetic diversity: (i) flood height in seasonal *várzea* is more effective in filtering species in human disturbed sites across the phylogeny (low sesMPD); (ii) however recently formed taxa are more aggregated (low sesMNTD) in human disturbed tidal *várzea* sites than in seasonal ones. These results may be associated with differences in local species pool formation and historic human disturbance between the two *várzeas* systems. It is known that human influence is not recent in the Amazon history and together with even more ancient river dynamics (e.g. Pleistocenic Andes elevation) may have been transforming tree communities evolution in Amazon floodplain landscape in different ways: low phylogenetic diversity associated with severe flooding conditions and high levels of human disturbance. These results indicate that to be effective, efforts to preserve tree diversity of Amazonian flooded forests must consider differences in local flood regime and interactions with historic human use.

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