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Supplementary Data S1. – Potential natural vegetation sensu Tüxen: answers to common concerns

As the current article relies on PNV estimations, it requires a demonstration of the soundness of the PNV concept needs, particularly in the face of ongoing critical papers (Chiarucci et al. 2010, Birks 2019). It was Tüxen (1956) who originally defined the concept of potential natural vegetation (PNV). According to his description, PNV embodies vegetation able to persist under the abiotic conditions at a given date, without active human management. Thus, PNV actually characterises the capability of the environment from the viewpoint of the vegetation. Critiques of the PNV concept have been shown to be typically due to misunderstandings and misinterpretations of the original definition (Somodi et al. 2012, 2021). This section summarises the main points debated regarding the concept of PNV and shows the main points of clarifications based on Tüxen's original definition after Somodi et al. (2021):

1) PNV vs pre-human vegetation. Pre-human vegetation tends to be treated as PNV (e.g. Carrión & Fernandez 2009). However, PNV applies to one definite point in time (Tüxen 1956, Somodi et al. 2021). This point can be either in the past, in the present or in the future corresponding to a predicted/planned/imagined environmental state, each having its own PNV (Tüxen 1956, Somodi et al. 2021).
2) PNV and succession. Some authors expect PNV to predict the outcome of natural succession at a site (e.g. Birks 2019). PNV reflects the site suitability for mature vegetation and does not consider whether it can be achieved by succession. The latter may be hampered by changes to the environment during the time required for succession or by its unsuitability for intermediate stages. Further misapprehension may stem from the English definition of PNV by Kalkhoven and van der Werf 1988 (see Somodi et al. 2021 for arguments). However, Tüxen focused on the suitability of the site, i.e. whether the site could sustain a given vegetation type or not (Somodi et al. 2021).
3) Applicability of PNV in the Anthropocene. One advantage of the PNV concept is that it does not take into account human impact, thus it can provide a baseline, a neutral model to which the ecological consequences of land use can be evaluated (Ricotta et al. 2002, Somodi et al. 2012). There were also doubts (e.g. Birks 2019) about whether the PNV concept is useful under changing environmental conditions. In fact, rather than being a problem, model-based PNV estimations can facilitate the assessment of potential climate change impacts (Somodi et al. 2021).

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