Supplementary Material

Table S1: adopted definitions for the concepts of ecosystem naturalness and ecological connectivity

MAIN CONCEPT	RELATED CONCEPTS	ADOPTED DEFINITION AND KEY REFERENCES
Ecosystem naturalness	Vegetation condition, landscape conservation status/condition	*Naturalness* is a characteristic associated to the physical and biological integrity of ecosystems, together with ecosystem service capacity, stability and resilience [Andreasen et al., 2001], and can be measured in a variety of ways. Specifically, assuming that vegetation cover types represent the ideal spatial proxy for ecosystems [Capotorti et al., 2015], vegetation condition can be considered a proxy for the overall naturalness of ecosystems [Ferrari et al., 2008]. In turn, vegetation condition can be assessed in terms of species composition and vegetation structure with respect to a reference baseline, such as the potential natural vegetation at the occurring site (*i.e.* the plant community that would establish if the successional sequence was completed without human disturbance) [Farris et al., 2010]. Therefore, the more a real vegetation community compositional and structural features are similar to those of an undisturbed one, the higher is its naturalness degree. Once determined, the naturalness of ecosystems at the patch or class level can be adopted as a basic indicator for assessing the structural conservation status (or structural condition) of landscapes [Capotorti et al., 2015].
Ecological connectivity	Landscape fragmentation	*Ecological connectivity* represents an emergent property of landscapes, which allows populations, communities and ecological processes to be maintained in a land mosaics disturbed and fragmented by human activities by means of ecological corridors, stepping stones and/or habitat mosaics [Bennett, 1999; Zeller et al., 2020]. It can be measured in both structural and functional terms, with *structural connectivity* mainly depending upon the spatial arrangement of the elements in the land mosaic (*i.e.* upon the physical continuity of landscape elements or habitats for a single species or for species assemblages). On the other hand, *functional connectivity* is determined by the structural one, but also depends upon the quality of available habitats as well as on the behavior and dispersal abilities of single species [Bennett et al., 2006; Calabrese & Fagan, 2004].

References [with respective number in the reference list of the main text]

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