Appendix S1 Methods

We reviewed articles to identify the currently existing methods that aim to assess the temporal dynamics of landscape connectivity. We interrogated Web of Science and Google Scholar with the following keywords: "landscape connect*", "temporal", "time", "dynamics", "changes" and "variability" to compiled peer-reviewed papers (excluding review papers) that were published up until April 2020. On the basis of the titles and abstracts, we focused on papers which reserved the use of the "graph theory" term in a landscape perspective to focus on landscape connectivity per se. We read the methodology section of each paper and excluded papers that did not mention the use for estimating the temporal dynamics of landscape connectivity. We supplemented the few papers we found with additional studies from the reference section of these papers. Methods that were solely used in a single study were then excluded (e.g., Hermoso et al. 2012; Ruiz et al. 2014; Bishop-Taylor et al. 2018). Overall, we identified a total of 32 studies.

References

Bishop-Taylor R, Tulbure MG, Broich M (2018) Evaluating static and dynamic landscape connectivity modelling using a 25-year remote sensing time series. Landscape Ecol 1–16. https://doi.org/10.1007/s10980-018-0624-1

Hermoso V, Ward DP, Kennard MJ (2012) Using water residency time to enhance spatio-temporal connectivity for conservation planning in seasonally dynamic freshwater ecosystems. Journal of Applied Ecology 49:1028–1035. https://doi.org/10.1111/j.1365-2664.2012.02191.x

Ruiz L, Parikh N, J. Heintzman L, Collins S, Starr S, Wright C, Henebry G, Van Gestel N, E. McIntyre N (2014) Dynamic connectivity of temporary wetlands in the southern Great Plains. Landscape Ecology 29:. https://doi.org/10.1007/s10980-013-9980-z