

Riparian vegetation metrics as tools for guiding ecological restoration in riverscapes



Riparian woods are frequently fragmented and degraded, mainly as a consequence of land-cover related stresses, water diversion, regulation and invasive species. The need to enhance these systems towards their natural functioning has motivated numerous restoration efforts. However, river managers still need guidance on how to allocate scarce restoration resources, and to monitor and report the effectiveness of the restoration programmes. For this, the present work proposes a stepwise methodological procedure over spatial scales, using quantitative descriptors (metrics) of the ecological condition of the riparian vegetation. This evaluation is based on the composition and cover of plant assemblages, species attributes, and spatial patterns, which can reflect the deviation of the structure and condition of the riparian zone from the near-natural state to an impaired situation. Landscape metrics obtained from high spatial resolution imagery are used for the evaluation of the spatial features of the riparian zone, followed by the calculation of a riparian multimetric index, based on field observations. The integration of multi-spatial scale information provided by landscape metrics and biological metrics is essential and recommended for decision support of end-users and to

evaluate the success of restoration measures.

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