Clear-cuts : do you like it? Coupling of a landscape aesthetic approach with landscape metrics

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Résumé

Considerable research effort, over more than 40 years, has been directed toward better understanding of the way people respond to diverse and changing landscapes. While the relationships between aesthetic and ecological landscape qualities have been explored and debated in landscape research they have been addressed very little in spatially explicit approaches. Knowledge of human responses to a changing world is an essential ingredient in successful implementation of measures which protect our forest socio-ecological systems. However, decision-making seldom flows from individual pieces of research. Evidence needs to be synthesised through systematic procedures, including aesthetic preferences, before having even the potential to influence policy makers. This proposal is an attempt to assess landscape preferences in the field of landscape aesthetics, especially in the context of clear-cutting and forest management. In this study, we propose a framework for analyzing covariation between visual and ecological landscape qualities based on spatial metrics measured from a gradient of clear-cutting. We apply this framework to the Morvan moutains (France) which have been subject to several forms of forest management. A set of spatial metrics derived from LiDAR has been used to characterize the visual and ecological dimensions of landscape and changes in them. Landscape preferences were evaluated from the 446 responses made to an internet survey in 2023. The survey was based on 39 pairwise comparison of 26 photographs, taken from roads and footpaths, and showing forest landscape diversity through a clear-cutting gradient. Using Pixscape software, cross-mapping of visual and metrics variations reveals analysis that clear-cutting area is associated with depreciated images. If logging is still viewed negatively in the literature, the question of its surface area remains more discussed until now, particularly among forest managers. So, this contribution to landscape ecological aesthetics provides insights for integrated forest landscape management with an alignment of visual and management goals for forest landscape sustainability.

Mots-Clés: Landscape Metrics, LiDAR, Forest management, aesthetic appraisal, visual quality

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