

Assessing the Social and Ecological Synergies of Green Alleys in Montreal

Justine Adlhoch-Mathé¹, Nicolas Kosoy¹

¹Department of Agricultural and Environmental Sciences, McGill University, Montreal, QC, Canada

Keywords: Alleyways, Community engagement, Green infrastructure, Social capital, Urban greening, Urban planning

Corresponding author email: justine.adlhoch-mathe@mail.mcgill.ca

Published: 05/05/2026

<https://doi.org/10.26443/msurj.v21i2.467>

Urban alleyways are underexplored spaces of potential ecological and social significance. While green alleyways are promoted to improve environmental quality, their distribution relies on borough-level governance and community engagement. The extent to which structural alley availability and socioeconomic factors facilitate greening, and how greening influences social capital and inter-species connections, remains unclear. This study aims to map regular (non-green) alleys, quantify greening patterns, and provide a baseline for assessing associated social and ecological outcomes. Using QGIS, we mapped 1,348 regular alleys across four Montréal boroughs and recorded their greening status. 25 Quartiers de Référence were analyzed to examine relationships among alley quantity, density, median household income, and green alley prevalence. Analysis methods used included descriptive statistics, Pearson correlations, linear regression, and binomial regression. A follow-up cross-sectional study (REB pending) will assess bonding, bridging, and inter-species social capital among residents in green alleys, regular alleys, and non-alley areas. On average, 22% of alleys were greened (range: 0–44%). Alley counts strongly predicted green alleys ($r = 0.74$), with moderate associations for density ($r = 0.39$) and income ($r = 0.60$). Linear and binomial models confirmed that higher alley availability, density, and income increased the likelihood of greening ($p < 0.05$). Causal inference cannot be made; greening may reflect pre-existing community engagement. Social capital outcomes await REB approval. Higher number and density of regular alleys encourage alleyway greening. Future analyses will clarify whether green alleyways correlate with community cohesion or environmental engagement.

© The Authors. This abstract is published under a CC-BY license:

<https://creativecommons.org/licenses/by/4.0/>