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CONTENTS

Abstract. Background: Thermal comfort significantly influences well-being, productivity, and living conditions in outdoor environments, particularly in rapidly urbanizing, warm, humid tropical climates. This study assessed the influence of 5 five common urban tree species (*Cassia fistula*, *Tectona grandis*, *Plumeria obtusa*, *Mangifera indica*, and *Terminalia catappa*) on outdoor thermal comfort, using the physiological equivalent temperature (PET) index in Colombo, Sri Lanka, as a case study for a tropical humid city. Methods: Field data collection encompassed measuring air and surface temperature, relative humidity, wind velocity, solar radiation, cloud cover, and sky view factor under tree canopies and adjacent exposed areas. The RayMan model was employed to estimate PET in both areas. Results: Our findings indicated that PET was consistently higher in exposed areas compared to under the tree canopy, with an average difference of 5.61 °C. Among tree parameters, sky view factor (SVF) demonstrated the most significant correlation with thermal comfort, followed by crown diameter and tree height. Furthermore, notable variations in thermal comfort were observed among tree species, with *Terminalia catappa* outperforming *Plumeria obtusa*, particularly on sunny days. Conclusion: Regression analysis highlighted the importance of integrating trees with large crowns and low SVF to create thermally comfortable outdoor spaces. Consequently, *Terminalia catappa* emerged as the most suitable tree species for enhancing thermal comfort in Colombo's outdoor urban areas out of the 5 selected species. These insights will aid in selecting appropriate tree species and parameters, fostering improved outdoor thermal comfort in tropical humid cities, and facilitating sustainable urban planning and design strategies.

Keywords. Outdoor Thermal Comfort; Physiologically Equivalent Temperature (PET); Rayman Model; Sky View Factor (SVF); Urban Greening.

Abstract. Urban forest management is crucial for supporting human well-being, ecosystems, and society, particularly with expanding global urban population and multi-uses of these urban greenspaces. This literature review examines the conceptualization and factors that contribute to conflicts and/or collaborations in urban forest management, including, but not limited to, diverse actors' uses, needs, and perceptions. Using PRISMA methods, we systematically reviewed 176 scholarly articles published between 2013 and 2021 and found that most articles were primarily from the United States, Australia, and Canada. Findings highlight the need for clearer definitions of collaboration, emphasizing communication, operational tasks, planning, and shared beliefs among actors. Positive collaborations involved multi-level engagement and inclusive decision-making. In most cases, multiple issues contributed to conflict, including a variety of stakeholders with differing viewpoints on a given situation. Conflicts are commonly complex situations that do not lend themselves to a one-size-fits-all solution and tend to be a unique manifestation of the people, places, and perspectives involved. Our review can inform practitioners about more inclusive practices and adaptive management of urban forests. We conclude by providing lessons learned and suggestions for future research on stakeholder involvement, public education, governance, policy, decision-making, and the role of biophysical and ecosystem services in urban forest collaboration and conflicts.

Keywords. Stakeholder Engagement; Urban Forest Governance; Urban Forest Management.

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Abstract. Background: The inventory of street tree populations has acquired new importance due to interest in the provision of ecosystem services. That said, this paper aims to compare systematic sampling with stratified systematic sampling using different sizes of sampling units to estimate the variables of interest: number of trees per kilometer of sidewalk (D_F), basal area per kilometer of sidewalk (D_g), mean total height ($\bar{H}_t$), volume per kilometer of sidewalk (D_V), and number of species per kilometer of sidewalk (D_E). An innovative contribution here is testing new alternative density variables. Methods: In the densely urbanized area of Piracicaba (Sao Paulo State, Brazil), 90 sets of 4 blocks were systematically sampled. They were used to compose sampling units of 1, 2, 3, and 4 blocks. Stratification was based on the percentage of street tree cover obtained with geoprocessing tools. Only public trees with a circumference at breast height greater than or equal to 12 cm and planted on sidewalks or avenue medians were included. Results: The effect of sampling unit size and stratification on estimate accuracy, sample size, and sampling intensity were analyzed. The results show that stratified systematic sampling was the more accurate process, especially for D_F, D_g, and D_V. Conclusions: Reductions in sample size were more significant when stratified systematic sampling of 2-block sampling units were used.

Keywords. Sampling Processes; Sampling Unit Size; Street Tree Cover Mapping; Urban Forest Inventory.

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