(44)

Arboricultural Assessment of Street Trees in Colombo City, Sri Lanka

**Madurapperuma B.D.[1*], Kuruppuarachchi K.A.J.M.[2], Herath W.N.[2],
Wijayathunga L.[2], Ranaweera T.[2], Sirimanna R.[2] and Sumanarathna A.R.[2]**

*[1]Department of Environmental Science and Management, Humboldt State University,United States,
[2]Faculty of Natural Sciences, The Open University of Sri Lanka,
bdm280@humboldt.edu

Abstract

Roadside trees are beneficial for providing ecological services, such as heat absorbance, natural air conditioning, and reducing GHG emissions in urban landscapes. This study examines the tree structure, species composition, species diversity, and some field observations (i.e. tree structural defects and disorders) on roadside trees in Colombo City. The vegetation parameters, such as diameter-at-breast height (DBH), tree height, and crown radius were measured in each tree. Purposive random sampling was adapted to invent street trees along High-level Road (Nugegoda to Tummulla junction), Bauddhaloka Mawatha (Tummulla junction to Borella Cemetery junction),Viharamahadevi Park circle and suburbs, Ananda Coomaraswamy Mawatha-Sri Jayawardanapura Mawatha (Kollupitia to Rajagiriya), Jawatta Road, Torinton Avenue and Keppitipola road. A total of 1458 street trees belonging to 92 species, 71 genera and 33 families were recorded along the roadways of Colombo City expanding ca. 20 km in length. Average 41 ± 18 trees were located per kilometer. The survey shows that 64% of the species were exotic and 36% were indigenous species, reflecting the trend towards planting more exotic tree species in streets in recent past. The most dominant street trees were *Albizia saman* [% Relative Density (RD)=8; % Relative Basal Area (RBA)=34, % Relative Crown Cover (RCC)=30] and *Peltophorum pterocarpum* [% RD=11; % RBA=16; % RCC=19]. The highest number of trees was recorded from Public Library to Town Hall via Anagarika Dharmapala Mawatha (69 trees/km and 36 spp./km) and the most diverse tree species composition was found along Marcus Fernando Mawatha (66 trees/km and 52 spp./km) at Viharamahadevi Park circle. In conclusion, maintaining urban forest inventories, silvicultural managing of street trees from *Ficus* invasion, and introducing suitable native trees viz., *Lagerstroemia speciose* (Murutha), *Pongamia pinnata* (Magul-Karanda), *Barringtonia asiatica* (Mudilla) and *Phyllanthus emblica* (Nelli) for future tree planting areas will be recommended.

***Keywords*:** Street trees, Forest inventory, Silvicultural management, Colombo city