

Riparian Vegetation Changes Along a Rural-Urban Gradient: A Case Study of the Kuru Ganga Tributary of the Kalu River in Sri Lanka

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A riparian zone, also known as riparian buffer, refers to the area of land situated along the banks of a river, stream, lake, or other water bodies. Considering the rural-urban gradient of the stream corridor landscape it can identify massive destruction of stream corridor ecosystem and serious damage to the riparian vegetation in stream ecosystem with increasing urbanization/anthropogenic activities. This study is focused on riparian vegetation changes along a rural-urban gradient in Kuru Ganga tributary in Kalu River, Sri Lanka. Relevant literature sources, legal documents, image classifications, belt-transect surveys, and field observations were used to conduct the study. As analysis methods: Simpson's Diversity Index, riparian vegetation analysis, and statistical analysis were used. Simpson's Diversity Index indicates rural segments range between 0.9-1 while urban segments range between 0-0.7. There is high vegetation species density and diversity in rural segment compared to urban segments. While the natural riparian vegetation of the study area consists of lowland wet evergreen vegetation, the riparian vegetation of average populated areas to densely populated areas mostly consists of home garden and agricultural species. Urban landscape of the study area stated a higher level of stream restoration requirements and the rural landscape of the study area still has healthy riparian vegetation conditions compared to urban. To conserve the riparian vegetation in both rural and urban landscapes government should strengthen the remaining laws and regulations and should give more power to responsible authorities to take legal actions in corridor demarcation. To achieve the sustainable status of stream corridor ecosystems there should be awareness programs for stream dwellers to maintain stream corridors and stream corridor restoration programs should be conducted to conserve native streamside flora in river basins in Sri Lanka.

Keywords: Riparian vegetation, Rural-Urban gradient, Simpson's Diversity Index, Kuru river basin, Environmental sustainability.