



Determining optimal buffer strip characteristics in Sarawak, Malaysia

The deteriorating quality of water in many sub-catchments across Malaysia has been attributed to rapid development and land clearance, associated with logging, mining, agriculture, industry and urbanisation. Accelerated soil erosion and the mobilisation of nutrients and chemicals pose the greatest threat to water quality, in addition to physical changes such as increasing water temperatures through canopy removal, loss of habitat and associated biodiversity.

There are many areas in Sarawak, Malaysia, that have been subject to clearance for the purpose of conversion into agricultural plantations or timber extraction enterprises. In many of these areas the potential flood and water quality impacts on the adjacent river system are mitigated by establishing or maintaining vegetated buffer strips. These buffer strips vary in size, composition and effectiveness.

The purpose of this study was to develop appropriate guidelines for determining buffer strip characteristics that will ensure their functional effectiveness. The study involved desktop reviews, research planning, field trials and development of a buffer design methodology. The final product was a simple validated tool for the determination of buffer strip width based on the buffer parameters of sediment load, vegetation, and slope.