Riparian buffers can help mitigate biodiversity declines in oil palm agriculture

ABSTRACT

Agricultural expansion is a primary driver of biodiversity decline in forested regions of the tropics. Consequently, it is important to understand the conservation value of remnant forests in production landscapes. In a tropical landscape dominated by oil palm (Elaeis guineensis), we characterized faunal communities across eight taxa occurring within riparian forest buffers, which are legally protected alongside rivers, and compared them to nearby recovering logged forest. Buffer width was the main predictor of species richness and abundance, with widths of 40–100 m on each side of the river supporting broadly equivalent levels of biodiversity as compared to logged forest. However, width responses varied markedly among taxa, and buffers often lacked forest dependent species. Much wider buffers than are currently mandated are needed to safeguard most species. The largest biodiversity gains are achieved by increasing relatively narrow buffers. To provide optimal conservation outcomes in tropical production landscapes, we encourage policy makers to prescribe width requirements for key taxa and different landscape contexts.