

Riparian reserves serve as a critical refuge for Asian otters (*Aonyx cinereus* and *Lutrogale perspicillata*) in oil palm dominated landscapes of Sabah, Malaysian Borneo

ABSTRACT

We determined the occupancy of otter species and assessed several habitat features influencing their occurrence in four different land-use types: continuous logged forests (CF), heavily degraded forest (DF), riparian reserves within oil palm plantation (RR), and oil palm plantations without riparian reserves (OP). Our aim was to ascertain the usefulness of retaining riparian reserve in oil palm dominated landscape for otter conservation. This study was conducted in the Malaysian state of Sabah, northern part of Borneo. We surveyed 36 stream sub-transects across all of the different land-use types and detected otter presence based on their tracks and spraints. Overall, two out of the four otter species found in Sabah were detected within the surveyed areas, i.e., the Asian Small-clawed Otter, *A. cinereus* and Smooth-coated Otter, *L. perspicillata*. Streams in agricultural sites were found to have significantly higher otter occupancy compared to forested areas: RR ($\psi = 0.97$), OP (0.83), DF (0.44), and CF (0.37). Using Generalised Linear Modelling (GLM), we identified that otter occupancy in oil palm landscapes was positively influenced by the availability of large trees and other vegetation along the banks. Deeper streams were also more preferred by otters. Interestingly, streams in oil palm plantations located nearer to human settlements recorded higher detection of otter signs. In general, this study suggests that streams in oil palm plantation with riparian vegetation are useful habitat for otter species. Hence, retaining riparian reserves within oil palm plantations is a useful management strategy to improve biodiversity conservation in an agricultural landscape.