

Responses of Sunda clouded leopard *Neofelis diardi* population density to anthropogenic disturbance: refining estimates of its conservation status in Sabah

ABSTRACT

Extensive areas of tropical forests have been, and continue to be, disturbed as a result of selective timber extraction. Although such anthropogenic disturbance typically results in the loss of biodiversity, many species persist, and their conservation in production landscapes could be enhanced by a greater understanding of how biodiversity responds to forest management practices. We conducted intensive camera-trap surveys of eight protected forest areas in Sabah, Malaysian Borneo, and developed estimates of Sunda clouded leopard *Neofelis diardi* population density from spatially explicit capture–recapture analyses of detection data to investigate how the species' abundance varies across the landscape and in response to anthropogenic disturbance. Estimates of population density from six forest areas were 1.39–3.10 individuals per 100 km². Our study provides the first evidence that the population density of the Sunda clouded leopard is negatively affected by hunting pressure and forest fragmentation, and that among selectively logged forests, time since logging is positively associated with abundance. We argue that these negative anthropogenic impacts could be mitigated with improved logging practices, such as reducing the access of poachers by effective gating and destruction of road access points, and by the deployment of anti-poaching patrols. By calculating a weighted mean population density estimate from estimates developed here and from the literature, and by extrapolating this value to an estimate of current available habitat, we estimate there are 754 (95% posterior interval 325–1,337) Sunda clouded leopards in Sabah.