

The first estimates of marbled cat *pardofelis marmorata* population density from Bornean primary and selectively logged forest

Abstract

The marbled cat *Pardofelis marmorata* is a poorly known wild cat that has a broad distribution across much of the Indomalayan ecorealm. This felid is thought to exist at low population densities throughout its range, yet no estimates of its abundance exist, hampering assessment of its conservation status. To investigate the distribution and abundance of marbled cats we conducted intensive, felid-focused camera trap surveys of eight forest areas and two oil palm plantations in Sabah, Malaysian Borneo. Study sites were broadly representative of the range of habitat types and the gradient of anthropogenic disturbance and fragmentation present in contemporary Sabah. We recorded marbled cats from all forest study areas apart from a small, relatively isolated forest patch, although photographic detection frequency varied greatly between areas. No marbled cats were recorded within the plantations, but a single individual was recorded walking along the forest/plantation boundary. We collected sufficient numbers of marbled cat photographic captures at three study areas to permit density estimation based on spatially explicit capture-recapture analyses. Estimates of population density from the primary, lowland Danum Valley Conservation Area and primary upland, Tawau Hills Park, were 19.57 (SD: 8.36) and 7.10 (SD: 1.90) individuals per 100 km², respectively, and the selectively logged, lowland Tabin Wildlife Reserve yielded an estimated density of 10.45 (SD: 3.38) individuals per 100 km². The low detection frequencies recorded in our other survey sites and from published studies elsewhere in its range, and the absence of previous density estimates for this felid suggest that our density estimates may be from the higher end of their abundance spectrum. We provide recommendations for future marbled cat survey approaches.