The effects of forest degradation on arboreal primates within Sikundur, the Gunung Leuser Ecosystem, Northern Sumatra

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The effective protection of tropical forests requires the development of methods that can rapidly assess tropical forest structure and relate this to habitat quality for keystone species, like primates. Whilst historical forest degradation's direct effect on wide-ranging mammals such as primates may be marginal in terms of reduced habitat, changes in forest structure alter the ranging behaviour and cognitive processes of primates foraging for dispersed food resources. Forest degradation also disturbs tropical forest canopy. Microclimate changes in degraded areas can drastically alter how and when primates use disturbed area of forest. Using Unmanned Aerial Systems (UASs) and microclimate data loggers, this study uses innovative, cost-effective means to collect geospatial data on tropical forest structure across a gradient of disturbance in 3-dimensions and links these measurements to the habitat requirements and travel paths of siamang (symphalangus syndactylus). This study relates over 700 hours of siamang observational and ranging data to the 3-dimensional forest structure, temperature and humidity data of 10km2 in Sikundur, Northern Sumatra. Results indicate that additional 3-D structural complexity of degraded forests and the subsequent microclimate changes directly influence travel path choice, the locations of certain behaviours and the height at which they occur.

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