

## SEASONAL VARIATIONS OF RANGING PATTERN IN PIGTAILED MACAQUES: INFLUENCE OF WILD AND HUMAN RESOURCES

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Numerous studies have highlighted the influence of food availability on primate behaviour. Our research aims at understanding the ranging pattern of a troop of northern pigtailed macaques (*Macaca leonina*) living around the visitor center of the Khao Yai National Park, Thailand. The frugivorous pigtailed macaques are supposed to adapt their ranging pattern to the spatio-temporal distribution of fruiting trees. However, the presence of humans, and thus, of human food, may also have an impact on their home range size and location. We followed the troop during 12 months and recorded its diet and progression within the home range (GPS points every 30 minutes). On monthly kernels defining the home range surface, we superimposed a grid of 110x110 m cells. We analysed the spatio-temporal distribution of fruiting trees in botanical transects and converted it into a food abundance index (FAI). Given their semi-terrestriality decreasing travel costs, we predicted that macaques should increase their range during the period of low fruit abundance to gather a sufficient amount of high-quality food (fruits). To the contrary, our results showed that the size of the troop's home range decreased during fruit scarcity (dry season). The diet analysis showed that during this period, macaques used human food, a high-quality resource, as fallback food which concentration around human settlements made the long travel no more necessary. Alternately, in period of fruit abundance, a correlation between the FAI and the number of GPS points from macaques for each home range cell showed that macaques spent more time in places with a higher abundance of some fruit species, in particular some considered as important in their diet. Finally, in this peculiar situation of macaques living close to human managed areas, both wild and human resources' spatio-temporal distribution influence the size and location of the troop's home range.

**Keywords:** home range, *Macaca leonina*, seasonal variations, human impact