

RELATIONSHIPS, RELATEDNESS AND RANGE OVERLAP AMONG FEMALE BORNEAN ORANGUTANS

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Adult female Bornean orang-utans (*Pongo pygmaeus wurmbii*) in Tuanan (Central Kalimantan, Indonesia) spend on average only circa 15% of their time in the company of adult conspecifics and only about half of that time in the company of other adult females (> 17000 hours focal observation). Kernel density estimation of the complete home ranges of 5 adult females (average 300 ha) and the partial home ranges of 4 additional females revealed that 'adjacent' females have an average home range overlap per dyad of 50% and a core area (50%use) overlap of c.15%. Genetic relatedness between females was determined using DNA extracted from non-invasively collected fecal samples. Based on mtDNA haplotypes and 26 nuclear DNA microsatellite loci we recognized one cluster of 4 closely-related adult females, one pair of close relatives and 3 females without close female relatives within the study area. All known female relatives were found to have overlapping ranges, but the degree of their range overlap was not larger than between non-related adjacent females. However, social association was much more common among related females, and characterized by more tolerance, than among unrelated overlapping dyads. In addition, dependent immatures hardly ever interacted with non-related peers, whereas social play was common during associations of related mother-offspring dyads. The results indicate that solitary Bornean orang-utan females, tend to be philopatric and form social and spatial clusters based on matrilineal relatedness. The size of these clusters may affect social development of their offspring.

Keywords: social relationships, genetic relatedness, home range, female philopatry