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Low Reproductive Skew among Flanged Male Orangutans in Gunung Palung National Park, Borneo, Indonesia

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Male orangutans exhibit bimaturism—two mature morphs—flanged and unflanged males. Flanged males are larger, have cheek pads (flanges) and large throat sacs, and produce long calls. Previous orangutan paternity studies found variation between the reproductive success of each morph and in the degrees of reproductive skew. However, these studies were limited by a lack of behavioral maternity data, the inclusion of ex-captive orangutans, and/or the presence of feeding stations. Here we present the first paternity data from completely wild orangutans with known mothers. We hypothesized that (1) flanged males would have higher reproductive success than unflanged males due to flanged male dominance and female preference and (2) a single male would not monopolize paternity due to the temporal and spatial distribution of fecund females. We used fecal samples collected in Gunung Palung National Park from 2008-2019 to genotype orangutans (13 offspring born 2002-2015, their 10 mothers, and 19 candidate sires) using 12 microsatellites. MICROCHECKER 2.2.3 and CERVUS 3.0 were used to confirm the suitability of the microsatellite panel, fidelity of individual identities, and genetic maternity. Paternity analysis was performed with both CERVUS 3.0 and COLONY 2.0.6.7. We were able to identify paternity for six offspring. Four flanged males sired five offspring, and one sire's morph was unknown at the time of conception. We found that flanged males have higher reproductive success and that females are not monopolizable in this completely wild setting. We discuss the implications of all published orangutan paternity results for understanding bimaturism in orangutans.

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