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FEEDING ECOLOGY OF BORNEAN ORANGUTAN (*PONGO PYGMAEUS MORIO*) IN DANUM VALLEY, SABAH, MALAYSIA: 3 YEARS OF RECORDS INCLUDING TWO MAST FRUITINGS

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We observed the diet and activity of Borneo orangutans (*Pongo pygmaeus morio*) in the primary lowland Dipterocarp forests of the Danum Valley, Sabah, Malaysia, during the period 2005–2007, including two mast fruitings. We collected 1,785 h of focal data on 24 orangutans. We identified 1,466 samples of their food plants and conducted a fallen-fruit census to monitor the fruit availability in the study area. Their activity budget was 47.2% feeding, 34.4% resting, and 16.9 % traveling. Fruits accounted for the largest part (60.9%) of feeding time, especially during the mast fruiting (64.0–100%), although the rates of leaves (22.2%) and barks (12.3%) were higher than those reported for *Pongo abelii* and *Pongo pygmaeus wurmbii*. The percentage of fruit feeding changed dramatically from 11.7 to 100%, showing a significant positive correlation with the amount of fallen fruit. When fruit feeding and fruit availability decreased, orangutans fed primarily on leaves of Spatholobus and barks of Spatholobus and dipterocarp as substitutes. Thus, these are food plants important for the animals' survival in this area. The percentage of feeding time during mast fruitings, when the orangutans foraged almost exclusively on fruits, was lower than those of other fruit seasons, when they frequently fed on leaves and barks as well as fruits, suggesting that they took high quality fruits during mast fruitings. Resting increased as feeding decreased in the late stage of every fruit season, suggesting that they saved energy to survive the next fruit-shortage period with the energy stored during the fruit season.

Keywords: Borneo orangutans, feeding ecology, mast fruiting, fallback foods