Reproductive parameters over a 37-year period of free-ranging female Borneo orangutans at Sepilok Orangutan Rehabilitation Centre

Abstract

We analysed the reproductive parameters of free-ranging female orangutans at Sepilok Orangutan Rehabilitation Centre (SORC) on Borneo Island, Sabah, Malaysia. Fourteen adult females produced 28 offspring in total between 1967 and 2004. The average censored interbirth interval (IBI) (i.e. offspring was still alive when mother produced a next offspring) was 6 years. This was shorter than censored IBIs reported in the wild but similar to IBIs reported for those in captivity. The nonparametric survival analysis (Kaplan-Meier method) revealed a significantly shorter IBI at SORC compared with wild orangutans in Tanjung Putting. The infant (0-3 years) mortality rate at SORC of 57% was much higher than rates reported both in the wild and captivity. The birth sex-ratio was significantly biassed toward females: 24 of the 27 sex-identified infants were females. The average age at first reproduction was 11.6 years, which is younger than the age in the wild and in captivity. The high infant mortality rate might be caused by human rearing and increased transmission of disease due to frequent proximal encounters with conspecifics around the feeding platforms (FPs). This young age of first reproduction could be because of the uncertainty regarding estimated ages of the female orangutans at SORC. It may also be affected by association with other conspecifics around FPs, which increased the number of encounters of the females with males compared with the number of encounters that would take place in the wild. Provision of FPs, which improves the nutritional condition of the females, caused the shorter IBI. The female-biassed birth sex-ratio can be explained by the Trivers and Willard hypothesis. The female-biassed sex ratio could be caused by the mothers being in poor health, parasite prevalence and/or high social stress (but not food scarcity) due to the frequent encounters with conspecifics around FPs.