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Virtual Meeting

A comparison of great ape life histories in captivity

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Primates, especially great apes, have slow life histories and long lifespans compared to other mammalian groups. Data pertaining to life history variables can be difficult to collect in the wild considering that species can have longer lifespans than the duration of a field site's existence. Here, we examine life history variables for captive-born great apes housed in the United States. Using studbook data, we investigate stillbirth rates, age at first birth (AFB), interbirth intervals, number of offspring, twinning rates, mean lifespan and maximum lifespans. Analyses presented here exclude individuals with estimated birthdates. The oldest maximum lifespan was recorded for gorillas (60.07yrs (female); n= 656) followed by chimpanzees (57.40yrs (female); n= 559), orangutans (54.88yrs (female); n= 660), and bonobos (52.15yrs (female); n= 144). Excluding individuals living ≤ 10 years of age, mean lifespan is similar for all great apes in captivity ($F(3,417) = 0.849$, $p = 0.467$; bonobos: 23.5 ± 9.8 yrs; chimpanzees: 25.2 ± 10.6 yrs; gorillas: 26.2 ± 10.2 yrs; orangutans: 24.2 ± 10.0 yrs). The stillbirth rate is highest in chimpanzees (0.147; n=559) then gorillas (0.144; n=658), bonobos (0.125; n=144), and orangutans (0.010; n=681). Gorillas (11.4 ± 3.7 yrs) have a younger AFB, on average, than chimpanzees (15.9 ± 6.9 yrs), bonobos (14.3 ± 6.9 yrs), or orangutans (14.4 ± 5.1 yrs) ($F(3,377) = 13.97$, $p < 0.0001$). We discuss how our findings are influenced by changes in husbandry practices as well as the captive environment. By examining the life histories of captive populations, we highlight the plasticity these species exhibit in relation to the timing of developmental and reproductive events.

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