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Demographic changes of a woylie (*Bettongia penicillata*) population with increasing density in a fenced reserve

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The woylie (*Bettongia penicillata*) has suffered severe decline across populations since 2001. The population at Karakamia Sanctuary in southwest Western Australia has not declined and the density has been increasing since its establishment in 1994. This population exists within a 275 ha fenced reserve which is owned and operated by the Australian Wildlife Conservancy (AWC). To provide information on the impact of high population density, this study investigated changes in demographic parameters between 1995 and 2010. Trapping data was collected each year as part of the fauna monitoring conducted by AWC. We analysed changes in body condition and fecundity between these years. Home range estimates were also calculated using radio telemetry. Preliminary results show as much as a threefold increase in home range size compared with other estimates for the species. This is presumably related to a decrease in resource availability for individuals at high population density. Additional results relating to body condition and fecundity will also be discussed. This data may represent a demographic response to resource limitation and has implications for the persistence of this important population.