

# Rainfall linked to skewed sex ratios

April 22 2010

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An increased proportion of male African buffalo are born during the rainy season. Researchers writing in the open access journal *BMC Evolutionary Biology* collected data from over 200 calves and 3000 foetuses, finding that rain likely exerts this effect by interaction with so-called sex ratio (SR) genes, which cause differences in number, quality or function of X- and Y-bearing sperm.

Pim van Hooft, from Wageningen University, The Netherlands, worked with a team of researchers to study animals in the Kruger National Park, the scene of the famous 'Battle at Kruger' wildlife video. He said, "Here we show temporal correlations between information carried on the male [Y chromosome](#) and foetal sex ratios in the buffalo population, suggesting the presence of SR genes. Sex ratios were male-biased during wet periods and female-biased during dry periods, both seasonally and annually".

The researchers studied data collected between 1978 and 1998 to investigate the associations between rainfall, birth rates/ratios and [genetic information](#). Ejaculate volume, sperm motility and proportion of normal-shaped sperm decrease significantly during the dry season. This decline in quality is likely due to decreasing availability and quality of food resources. According to van Hooft, "These observations may point towards a general mechanism in mammals whereby semen-quality related [sex-ratio](#) variation is driven by SR genes".

**More information:** Rainfall-driven sex-ratio genes in African buffalo suggested by correlations between Y-chromosomal haplotype

frequencies and foetal sex ratio, Pim van Hooft, Herbert HT Prins, Wayne M Getz, Anna E Jolles, Sipke E van Wieren, Barend J Greyling, Paul D van Helden and Armanda DS Bastos, BMC Evolutionary Biology (in press), [www.biomedcentral.com/bmcevolbiol/](http://www.biomedcentral.com/bmcevolbiol/)

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