

The effect of density on alternative mating tactics in the New Zealand giraffe weevil

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Many animal species have evolved weaponry as a means to resolve conflict between conspecifics in the acquisition of mates. In those species with high size variation, it is common for there to be alternative mating tactics (ARTs), where dominant individuals behave differently to subordinate males during mate searching and copulation. Despite these ARTs, subordinate males are usually thought to have a lower mating success than dominant males, and are simply making the best of a bad situation. Males of the giraffe weevil (*Lasiornychus barbicornis*) possess greatly elongated rostrums used as weapons during contests with other males for access to females. However, adult males are also highly size variable such that there is a 6-fold difference between the smallest and largest equivalent-aged individuals. This has led to the evolution of ARTs, where small males, in addition to using their rostrum to fight, will also use sneaking tactics to copulate with females while larger males stand guard. We previously found that at high densities there was no difference in relative mating success between males of different sizes, despite the expectation that large males would have the competitive advantage. We suggest that at high densities defence-based competition breaks down to scramble competition. To investigate the influence of both seasonal and local density on the relative mating success of different sized individuals, we conducted an extensive series of field-based observations between November 2011 and March 2012. These observations will lead us to further understand mating behaviour in the context of ARTs and weapon use.

