

Promiscuity pays in the frog world

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Credit: Macquarie University

(PhysOrg.com) -- New research shows that the offspring of promiscuous female frogs have a higher rate of survival than those who remain monogamous, according to Macquarie University biologist, Associate Professor Martin Whiting.

One of nature's biggest mysteries is why some females mate with multiple males (polyandry) despite the risk of disease transmission, potential injury and even increased predation risk. In externally fertilizing animals, including some species of fish and [frogs](#), females can mate with multiple males at the same time (simultaneous polyandry).

"One hypothesis to explain this behavior is that females accrue genetic benefits that improve offspring viability, but until now, this remains

largely untested," Whiting said.

Along with fellow researcher Philip Byrne from the University of Wollongong, the pair investigated whether simultaneous polyandry influences offspring fitness in a wild population of the African Grey Foam Nest Treefrog (*Chiromantis xerampelina*).

"Simultaneous polyandry in this frog is the most extreme reported for any vertebrate, with more than 90% of females mating with 10 or more males during the deposition of a single clutch," Whiting said.

Whiting and Byrne compared growth (using age and size at metamorphosis as proxies) and survival of offspring produced by females that naturally mated with either one male (monandrous females) or 10 - 12 males (polyandrous females). Polyandry did not influence size or age at metamorphosis, but offspring from polyandrous matings had significantly higher mean survival.

Their findings implicate a genetic benefit to females mating with multiple males, and suggest that females are advantaged by mating promiscuously.

"Irrespective of the causation, these findings provide the first evidence that naturally formed polyandrous matings have increased [offspring](#) viability in a frog and help contribute to our understanding of sexual reproduction in the context of multiple matings," Whiting said.

Provided by Macquarie University

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