

# Australian frog species chooses not to put eggs in 1 basket

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A groundbreaking new study into the mating and nesting practices of a common Australian frog has found they partner up to eight males sequentially – the highest recorded of any vertebrate.

Dr Phillip Byrne, from Monash University's School of Biological Sciences, has researched the frog species Bibron's toadlet (*Pseudophryne bibronii*) for six years and in this latest field trip, discovered a new behaviour undetected in a frog species until now.

"Our study revealed that females made the active decision to distribute their eggs between the nests of up to eight different males," Dr Byrne said.

Dr Byrne led the study, which involved Professor Scott Keogh from Australian National University, in an area at Jervis Bay National Park on the New South Wales south coast .

They worked overnight shifts from 6 pm to 6 am, seven days a week for over four months and kept track of almost 100 frogs.

Using DNA markers Dr Byrne found females that distributed their available eggs between the nests of more males, as opposed to leaving them in one nest, had elevated offspring survival, presumably by insuring against nest failure.

"Traditionally it was thought that males, but not females, should benefit

from promiscuous behaviour because males generally invest less in reproduction. This level of promiscuity is a new record among vertebrates and certainly supports the old adage of not putting all your eggs in the one basket," Dr Byrne said.

"Our study advances our understanding of female promiscuity by being the first to show that promiscuous females can safeguard against choosing fathers that provide poor homes for their offspring.

"It is becoming increasingly apparent that females in many animal species choose to mate with multiple partners as a safeguard against choosing a genetically inferior sire, but insurance against a father who provides a lousy home is a novel and potentially widespread explanation for the evolution of female promiscuity," Dr Byrne said.

The *Pseudophryne bibronii* is brown to black in colour and at just 30mm in length is one of the smaller frog species in Australia. It can be found along the eastern states of Australia and lives in forests, heathlands and grasslands.

Dr Byrne's study was published in the journal *Proceedings of the Royal Society of London*.

Source: Monash University

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