

Low-pitched song indicates fairy-wren size

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Male purple-crowned fairy-wrens sing trill songs in response to predator calls. They seem to take advantage of the attention attracted by predator calls, and sing their advertising songs when females are paying most attention. Credit: Michelle L Hall

A male fairy-wren's low pitch song indicates body size, a new international study has shown.

The study led by University of Melbourne researcher Dr Michelle Hall, is the first to show that the larger the male fairy [wren](#), the lower the pitch of his song.

"This is the first time we have been able to show that song pitch indicates body size in [song birds](#)," said Dr Hall from the University's Department of Zoology.

The study, which began when Dr Hall was at the [Max Planck](#) Institute for [Ornithology](#) in Germany, has been published today in the journal [PLOS ONE](#).

Reliable communication about body size between animals is particularly important when communicating with mates or rivals. For example the bigger the rival is, the more likely it is to win in a fight so a song pitch indicating a large size may deter rivals.



Male and female purple-crowned fairy-wrens live in dense vegetation along the creeks and rivers of the Kimberley and Top End in Australia. Each bird in the study had a unique combination of colored leg bands that allowed researchers to recognize it individually in the wild. Credit: Michelle L Hall

"Surprisingly, there is very little evidence that the pitch of calls indicates body size differences within species, except in frogs," she said.

"In birds in particular, there has been no evidence that the pitch of songs indicated the size of the singer until now."

The study involved measuring the leg length (a good indicator of overall body size) of 45 adult male purple-crowned fairy-wrens. It found there was a correlation between the lowest song pitches and male size.

"We found the bigger males sang certain song types at a lower pitch than

smaller males," she said.

Purple-crowned fairy-wrens are creek-dwelling birds from [northern Australia](#) and, like their close relatives the blue wrens, males sing trill songs after the calls of certain predators, a context that seems to attract the attention of females.

Males have a repertoire of trill song variants, and it is the low-pitched variants that indicate the size of the singer.

Dr Hall showed that it may be the complexity of [birdsong](#) that has obscured the relationship between body size and song frequency in the past.

"Birds can have large repertoires of song types spanning a wide frequency range, and some birds even shift the pitch of their songs down in aggressive contexts," she said.

"Focusing on the lowest pitches that males were able to sing was the key to finding the correlation with body size."

Provided by University of Melbourne

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