

Randy red-backed fairy-wrens' duets reduce cuckoldry

February 26 2016, by Pat Leonard



Red-backed fairy-wren pair singing duet. Credit: Joseph Welkin

The courtship and mating behaviors of the perky Australian red-backed fairy-wren have evolved into nothing short of a free-for-all. The rampant promiscuity of both sexes is legendary.

What's a fairy-wren to do to keep from wasting energy raising another male's chicks? New research from scientists at the Cornell Lab of Ornithology provides a surprising answer: Sing with your mate.

"The result was not expected at all," said Daniel Baldassarre, Ph.D. '14, an author of the study published Feb. 24 in the journal *Biology Letters*. He was a Cornell graduate student at the time of the study and is a National Science Foundation postdoctoral fellow at the University of Miami. "In fact, we were actually looking into whether more aggressive males did better at preventing extra-pair matings with their mate than more timid males. We thought the aggressive males would be cuckolded less often."

The scientists tested their theory in the subtropical grassland and open woodland habitats favored by a population of color-banded red-backed fairy-wrens just outside Brisbane in Queensland, Australia. DNA paternity testing on the offspring from nests in the study site found 60 percent contained young sired by a male who did not share their nest.



Fake fairy-wrens and song recordings prompted varying levels of male aggression. Credit: Emma Greig

To test the aggression hypothesis, the scientists positioned fake fairy-wrens in the bushes and played male song recordings. Some wrens were fierce in their territorial defense, physically attacking the fake birds to drive them off. Others were wary. But in the end, it made no difference. Whether lion or lamb, on average the males got cuckolded just as often.

But in addition to measuring levels of aggression, the scientists also measured how quickly pairs began a duet and how often they sang duets after detecting an intruder. Those who reacted quickly and sang duets more are said to have a "strong" duet-singing response. Others were slower on the uptake.

"We found that pairs with a strong duet response had lower rates of cuckoldry," said study author and Cornell Lab of Ornithology scientist Emma Greig. "Pairs were less likely to mate outside of their pair bond when they sang together more."

"The male and female will immediately fly together and perch on a branch right next to each other and start belting out these duets," added Baldassarre. "If the males are particularly riled up, they will do this 'puff-back' display, raising the orange or red feathers on their back to the intruder. While singing duets, their heads are thrown back to the sky with their beaks wide open."

Even when pairs have a strong duet response, sometimes the mates still stray, but it does increase the likelihood that they're raising mostly their own genetic offspring.

What exactly is going on during this duet and who is taking the lead? That's the next big question in order to figure out what function the duets serve.

"The big picture question is about how animals make mating decisions," Greig explained. "Our results suggest the females are deciding what [males](#) to cuckold. Females are either being influenced by their mate's songs, or females are indicating their own choice by singing with their mates more. We need more detailed work to distinguish these alternatives."

More information: Daniel T. Baldassarre et al. The couple that sings together stays together: duetting, aggression and extra-pair paternity in a promiscuous bird species, *Biology Letters* (2016). [DOI: 10.1098/rsbl.2015.1025](https://doi.org/10.1098/rsbl.2015.1025)

Provided by Cornell University

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