

Unique birdsong denotes whipbirds evolutionary divergence

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“It [also] suggests that the vocalisations on the wedgebills and the western whipbirds are ancestral... and it’s the eastern whipbird that has diverged hugely in its vocalisation,” Dr Joseph says. Credit: Leo

Genetic analysis has shown the eastern and western whipbirds (*Psophode* sp) to be less closely related than was thought.

Department of Parks and Wildlife biologist Allan Burbidge says each is more closely related to the two species of wedge bill (*P. cristatus* and *P. occidentalis*), with all four species sharing a common ancestor.

Dr Burbidge says he requested the analysis, using tissue from museum collection skins, because of conservation concerns about the western whipbird (*P. nigrogularis sensu lato*).

He says there had even been some dispute as to whether the sub-species in WA were, in fact, separate species.

"Whipbirds come up as species where there might be potential impacts from proposed mining activities," he says.

"It was from that perspective desirable to sort it out...so that we could find out whether these things really were unusual and unique."

Formerly found as far north as Wongan Hills, western whipbirds are olive green and elusive with two sub-species in South Australia and two in Western Australia's southern wheat belt.

None have the eastern (*P. olivaceus*) whipbird's distinctive whip-crack-like call.

The WA sub species oberon, found in mallee country, is listed as endangered while the heath-dwelling nigrogularis sub species has threatened status.

CSIRO Sustainable Ecosystems ornithologist Leo Joseph says lead author and population geneticist Dr Alicia Toon analysed mitochondrial DNA for the ND2 gene from specimens of all relevant birds.

"ND2 is a very useful gene in birds when you are asking questions within and between species," Dr Joseph says.

"We proceeded to sequence western and eastern whipbirds, and the two wedgebills, because we wanted to look at the evolution of their different calls and their different plumages.

"The wedgebills and the western whipbird sound a lot like each other.

"The two whipbirds superficially look like each other and the two wedgebills [are] barely distinguishable."

He says phylogenetic analysis provides a useful framework to map the evolution of the species' characteristics.

"It suggests that the whipbird plumage is an old ancestral sort of plumage and that the wedgebills have lost that and become very drab and pale in their desert environment," Dr Joseph says.

"It [also] suggests that the vocalisations on the wedgebills and the western whipbirds are ancestral...and it's the eastern whipbird that has diverged hugely in its vocalisation."

Dr Burbidge says it is now clear that there is only one species of whipbird present in Western Australia, and the two sub-[species](#)' classification will be subject to review.

More information: Toon, Alicia, Joseph, Leo, and Burbidge, Allan H. (2013). Genetic analysis of the Australian whipbirds and wedgebills illuminates the evolution of their plumage and vocal diversity. *EMU* 113, 359–366. [dx.doi.org/10.1071/MU13005](https://doi.org/10.1071/MU13005)

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