

Kimberley wren distribution requires conservation tactic rethink

January 6 2014, by Sarah Curran-Ragan



“We discovered that sub-populations of the purple-crowned fairy-wren span many patches of habitat across multiple properties,” Dr Skroblin says. Credit: Anja Skroblin

Populations of the endangered purple-crowned fairy-wren have been found to be isolated across various sections of the Kimberley, hampering conservation efforts for the species.

Researchers from the Australian Wildlife Conservancy (AWC) have investigated the patch scale occurrence of the [endangered species](#) (*Malurus coronatus coronatus*), which favours riverine environments (riverbanks).

AWC expert Dr Anja Skroblin says this is the first study to describe fine-

scale distribution of the wren's suitable habitat, and examine appropriate conservation options.

Combining on-ground bird surveys with aerial vegetation assessments, Dr Skroblin and co-author Dr Sarah Legge, developed a predictive model to assess the suitability of river habitat across 14 catchments in the Kimberley.

"We used a novel habitat mapping procedure which allowed us to assess the fine-scale [territory level] occurrence of habitat across a vast landscape," Dr Skroblin says.

Suitable habitat was limited to five subpopulations across 305km of riverine vegetation, which was fragmented into 342 patches along a surveyed waterway of 2700km.

The model predicted large populations on the Fitzroy, Durack and Drysdale catchments, while smaller populations could be supported on the Isdell and Pentecost catchments.

The model estimated that a total population of 2834-4878 individual wrens could be supported in the available habitat within the survey area.

"It was surprising to discover how extremely fragmented and limited this habitat is in the Kimberley," Dr Skroblin says.

"We discovered that sub-populations of the purple-crowned fairy-wren span many patches of habitat across multiple properties."

Dr Skroblin says the results present strong evidence that a landscape-scale approach to conservation management, across multiple tenures, is vital to safe-guarding the widely dispersed populations of the wren.

"Efforts to conserve the species that focused on a stretch of river or on one property [which may only contain a few territories] would be ineffectual in preventing decline," she says.

A more collaborative approach across tenures is needed, she says.

The species is restricted to the waterways of northern Australia and is under pressure of habitat loss due to grazing and trampling by introduced herbivores, weed invasion and fires.

"To prevent degradation of riparian [habitat](#), and decline of the [species](#), it is important to limit the access of livestock, and control the incidence of intense fires in riparian areas."

Populations of purple-crowned fairy-wrens that are at greatest risk of extinction, require urgent intervention to prevent their decline."

More information: Skroblin A, Legge S (2013) "Conservation of the Patchily Distributed and Declining Purple-Crowned Fairy-Wren (*Malurus coronatus coronatus*) across a Vast Landscape: The Need for a Collaborative Landscape-Scale Approach." *PLoS ONE* 8(5): e64942. [DOI: 10.1371/journal.pone.0064942](https://doi.org/10.1371/journal.pone.0064942)

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