

Threatened Species of the Northern Territory

PURPLE-CROWNED FAIRY-WREN (Western subspecies) *Malurus coronatus coronatus*

Conservation status

Australia: Endangered

Northern Territory: Vulnerable



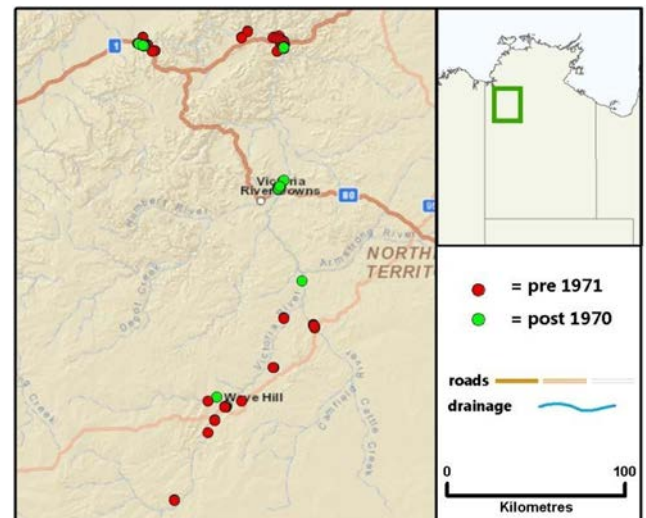
Photo: G.Chapman

Description

The purple-crowned fairy-wren is a large unmistakable fairy-wren. Males in breeding plumage have a vivid purple crown with a black centre, surrounded by a broad black band through the eyes and around the nape. The wings and back are cinnamon to sandy, the throat and breast are white, shading to rufous-buff on the flanks and belly. The tail is deep blue and all except the central pair of feathers are broadly tipped with white. Females lack the purple crown and black band, but have white eye rings and brow and broad red-brown cheek patches.

Distribution

The purple-crowned fairy-wren is known from two subspecies, both of which occur in the Northern Territory (NT). The eastern subspecies, *M. c. macgillivayi* is known from north-western Queensland and the Gulf hinterland in the NT, extending as far west as the upper Roper River. The western



Known locations of the western purple-crowned fairy-wren

subspecies, *M. c. coronatus* occurs from the Victoria River catchment west to the north Kimberley, Western Australia (WA). In WA, the species is found along some of the river systems in the Kimberley. Within this range, purple-crowned fairy-wrens are almost entirely restricted to a narrow band around well-vegetated river channels.

Conservation reserves where reported:

Judbarra / Gregory National Park.

Ecology

Purple-crowned fairy-wrens prefer thick riparian vegetation, typically of canegrass and/or pandanus, but also dense patchy shrubs up to 3 m.

Purple-crowned fairy-wrens live in small family groups of 2-6+ birds. They are territorial and sedentary, feeding in loose groups in the undergrowth or on the ground. They remain in contact using a soft chirping. They feed on a variety of insects and also eat small quantities of seeds.

If conditions are suitable they can breed throughout the year. Females typically lay three eggs in a bulky nest in the crown of a pandanus or in thick clumps of canegrass.

Conservation assessment

Recent helicopter surveys have shown that the canegrass habitat favoured by this subspecies is much more fragmented than previously thought, leading to the conclusion that there are three sub-populations in the Victoria River system of the NT. The NT population is probably <5 000 breeding individuals, with an extent of occurrence of c. 41 000 km² (A-M van Doorn pers. comm.). In WA, the distribution has been severely reduced – the species is no longer found on the upper reaches of Pentecost or lower reaches of Fitzroy, and is now sparse along the middle and upper Fitzroy,, but remains in the Isdell, Drysdale, Durack and Ord River systems (Rowley 1993; Garnett and Crowley 2000).

Current pastoral practices and fire regimes are detrimental to the preferred habitat and are leading to decline and disappearances of

fairy-wrens from known areas. However, the decline is not well documented due to the lack of good population estimates. This is the focus of a current study by A-M van Doorn.

The sub-species is considered Vulnerable in the NT (under criteria B2ab and C1) due to:

- area of occupancy estimated to be <2000 km²;
- severely fragmented or known to occur at no more than ten locations;

- continuing decline in area, extent and quality of habitat; and number of mature individuals;
- a population of <10 000 mature individuals; and
- an expected decline >10 per cent over the next 10 years or three generations.

Threatening processes

The greatest threat to the subspecies is degradation or loss of habitat. Livestock seeking water eat and trample riparian vegetation, and more frequent and/or more intense fires have also been detrimental in some places. Anne- Marie van Doorn (pers. comm.) reports a decrease of 50 per cent in the adult populations at two sites where grazing and trampling was allowed around habitat patches over a two year period. The canegrass in these areas recovered quickly after the area was fenced, but the wren population has not yet recovered. Boekel (1979) described a similar pattern in the Victoria River area in the 1970s, with cattle grazing destroying habitat during bad droughts and exposing wrens to predation by cats, and failure to recolonise once habitat had apparently recovered. A similar pattern of decline associated with damage to riparian vegetation by livestock was reported for the Kimberley by Smith and Johnstone (1977). Increased flood energy due to rangeland degradation has also destroyed some areas of riparian vegetation. Heavy weed invasion may also have adverse effects now and in the future. Recent studies (by A-M van Doorn) have indicated very low breeding success, largely due to nest predation. This study site is now known to contain the exotic black rat *Rattus rattus*, a known voracious nest predator.

Conservation objectives and management

Riparian vegetation in fairy-wren areas needs to be managed carefully. Stock should be excluded from riparian vegetation (e.g. along key large stretches of the Victoria River), and these areas need to be protected from frequent fires. The impacts of black rats on the wren's reproductive success should be assessed, and a remedial program established if this predation is significant.

An existing study of purple-crowned fairy-wrens near the Victoria River crossing of the Victoria Highway would form a baseline for an ongoing monitoring program, and such ongoing monitoring should be maintained.

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References

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