

NSW SCIENTIFIC COMMITTEE

Rufous Fieldwren *Calamanthus campestris*

Review of Current Information in NSW

May 2008

Current status:

The Rufous Fieldwren *Calamanthus campestris* is not currently listed under Commonwealth legislation, but it is listed as Near Threatened in Victoria (on the Advisory List, though not listed on the *Flora & Fauna Guarantee Act 1988*). The species has been listed in NSW as the Striated Fieldwren *Calamanthus fuliginosus*, however following taxonomic revision, the Rufous Fieldwren is now recognised as a full species separate from the Striated Fieldwren. The NSW Scientific Committee recently determined that the Rufous Fieldwren meets criteria for listing as Vulnerable in NSW under the *Threatened Species Conservation Act 1995* (TSC Act), based on information contained in this report and other information available for the species.

Species description:

The Rufous Fieldwren is a small (12 cm), scrubwren-like, rusty brown songbird, strongly streaked, with a pale eyebrow, throat and belly, a plain rusty rump, and a cocked tail. It is paler and more rufous than the Striated Fieldwren, and occupies arid rather than coastal habitats. It is similar to the Striated Grasswren *Amytornis striatus* and Thick-billed Grasswren *A. textilis*, but has a different facial pattern and a shorter tail with a white tip. The female Redthroat *Pyrrholaemus brunneus* is much plainer, the Shy Heathwren *Hylacola cauta* has a brighter rufous rump and white wing spot, and the Little Grassbird *Megalurus gramineus* is plainer (less rusty) with a longer, unmarked tail.

Taxonomy:

Calamanthus campestris (Gould 1841) is an endemic Australian genus and endemic Australasian family (Acanthizidae). The taxon in NSW is the nominate subspecies *C. c. campestris*, which also occurs across South Australia into south-eastern Western Australia. The Rufous Fieldwren was recently recognised as a full species separate from the Striated Fieldwren *C. fuliginosus* of coastal south-eastern Australia (Schodde & Mason 1999; Higgins & Peter 2002; Christidis & Boles 2008). The western wheatbelt (Western Australia) subspecies *C. c. montanellus* is Near Threatened (Garnett & Crowley 2000).

Distribution and number of populations:

In NSW, the Rufous Fieldwren is restricted to the far western arid zone, between the lower Darling River and the South Australian border (Higgins & Peter 2002), as a single population contiguous with that in South Australia.

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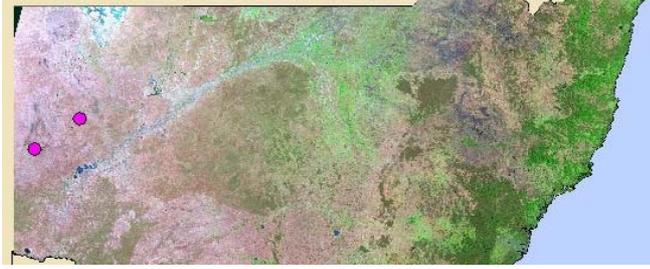


Figure 1: NSW records of the Rufous Fieldwren since 1980 (NSW Wildlife Atlas)

Ecology:

The level of knowledge on the ecology of this species is considered poor, especially in the east of its Australian range (*i.e.* western NSW), since it was separated specifically from the Striated Fieldwren (Higgins & Peter 2002).

Key habitat requirements

The Rufous Fieldwren inhabits low, sparse or dense chenopod shrublands, samphire and heathland. Some habitat, especially chenopod shrubland (bluebush and saltbush, its main habitat in NSW), has been degraded through overgrazing by livestock (Garnett & Crowley 2000; Higgins & Peter 2002; Barrett *et al.* 2007).

Breeding biology

The Rufous Fieldwren builds a domed nest of plant fibres on the ground, under low shrubs or grass tussocks, or sometimes in a low shrub within a metre of the ground. A clutch of usually two or three eggs is laid from late winter to early summer; the incubation period is probably about 16 days, and the nestling period is probably about 17 days, by analogy with closely related species (heathwrens and the Speckled Warbler *Chthonicola sagittata*); the post-fledging dependence period is one month. Low nests are vulnerable to predation by cats and foxes, and to disturbance by livestock.

Diet

The Rufous Fieldwren feeds mostly on insects, but also on some small snails, berries and seeds that are gleaned on the ground and from low shrubs. Its foraging habitat and food supply are vulnerable to overgrazing and fire.

Social biology

The Rufous Fieldwren occurs solitarily, in pairs, or in family groups of adults and dependent young during the post-fledging period.

Territoriality/home range

There is little information available, but sedentary pairs maintain exclusive breeding territories (Higgins & Peter 2002).

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Generation length

Generation length is estimated as four years for the Western Australian subspecies (Garnett & Crowley 2000). It is considered that this value would be similar for the Rufous Fieldwren.

Ability to disperse/susceptibility to population fragmentation

The Rufous Fieldwren is a rather weak, short-distance flyer, with limited dispersal capability. The Western Australian subspecies is susceptible to habitat and population fragmentation, with subpopulations in habitat remnants thought to be genetically isolated (Garnett & Crowley 2000; Higgins & Peter 2002).

Number of mature individuals:

The number of mature individuals is unknown for NSW, but presumed to be moderately low. Based on geographic distribution, the NSW population may be 5% of that of the West Australian wheatbelt subspecies *C. c. montanellus* (100 000 birds: Garnett & Crowley 2000), *i.e.* 5 000 birds, if similar densities apply. During the two national bird atlases (Blakers *et al.* 1984; Barrett *et al.* 2003), the Rufous Fieldwren was recorded in fewer one-degree grids in NSW, at the lowest reporting-rate category, than the similar Redthroat (which is Vulnerable in NSW, and occupies the same arid-zone range and habitats): two versus six grids in the first atlas, and four versus six grids in the second atlas. This difference also applied to ten-minute grids (17 versus 21: Cooper & McAllan 1995). These data are taken to imply that the Rufous Fieldwren has a small range and population in NSW.

Threats:

The main threat to the Rufous Fieldwren in NSW is degradation of chenopod shrubland habitat through overgrazing by livestock (Higgins & Peter 2002). For instance, the core range of the species in NSW (the Broken Hill Complex Bioregion) has a landscape stress factor of 4 (moderately stressed) out of 6, based partly on extent and continuity of native vegetation and impact of grazing (Morgan 2000; Barrett *et al.* 2007). Other threats include cultivation of habitat, wildfire, and predation by cats and foxes. 'High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition', 'Predation by the European Red Fox *Vulpes vulpes*', and 'Predation by the Feral Cat *Felis catus*' are listed as Key Threatening Processes under the TSC Act in NSW.

Extreme fluctuations:

There is no evidence of extreme fluctuations in the population size or the habitat of this species.

Population reduction and continuing declines:

There is little evidence for NSW, but populations have declined elsewhere in the southern Australian sheep-wheat belt. For instance, the Rufous Fieldwren has disappeared from the Fleurieu Peninsula and Adelaide Plains in South Australia, and from parts of the Nullarbor Plain (Higgins & Peter 2002), and it has undergone a "massive reduction" in area of occupancy in the

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Western Australian wheatbelt in the second half of the 20th century (Garnett & Crowley 2000; Higgins & Peter 2002). There were too few NSW records in the two national bird atlases, 1977-1981 and 1998-2002, to compare reporting rates in the two time periods (Barrett *et al.* 2007).

Extent of Occurrence (EOO) & Area of Occupancy (AOO):

The Rufous Fieldwren's calculated EOO in NSW is about 40 000 km², based on (1) an occupied area of *c.* 400 x 100 km between the Darling Anabranch and the South Australian border, and (2) the species being recorded in four one-degree grids (each of *c.* 100 km square). AOO is unknown but may be about 1 300 km², based on presence in 17 ten-minute grids (each about 10 x 15 km) (Cooper & McAllan 1995), at an estimated occupation rate of about 50% of the area of each grid (assuming that not all of each grid is occupied by the bird or its habitat, given that suitable habitat is likely to be patchy, and the Broken Hill Complex Bioregion has a landscape stress rating of 4 out of 6: Barrett *et al.* 2007). This estimate is based on accumulated historical records, but current AOO may now be less.

Severe fragmentation:

There is little evidence available for NSW. The Western Australian wheatbelt subspecies' range has been severely fragmented by agriculture (Garnett & Crowley 2000), and the NSW population may be susceptible to population and habitat fragmentation if cropping activities increase in its habitat.

References:

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Explanatory note

Between 2007 and 2009 the NSW Scientific Committee undertook a systematic review of the conservation status of a selection of plant and animal species listed under the Threatened Species Conservation Act. This species summary report provides a review of the information gathered on this species at the time the Review was undertaken.

The Scientific Committee's report on the Review of Schedules project and final determinations relating to species that were either delisted or had a change in conservation status can be found on the following website: www.environment.nsw.gov.au.

The Committee gratefully acknowledges the past and present Committee members and project officers who ably assisted the Committee in undertaking the Review of Schedules Project. Information on the people involved in the project can be found in the Acknowledgement section of the project report entitled "Review of the Schedules of the Threatened Species Conservation Act 1995. A summary report on the review of selected species" which is available on the abovementioned website.

This species summary report may be cited as:

NSW Scientific Committee (2008) Rufous Fieldwren *Calamanthus campestris*. Review of current information in NSW. May 2008. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.