

# NSW SCIENTIFIC COMMITTEE

## Striated Fieldwren *Calamanthus fuliginosus*

Review of Current Information in NSW

May 2008

### Current status:

The Striated Fieldwren *Calamanthus fuliginosus* is not currently listed under Commonwealth legislation. The species has been listed in NSW, as a species incorporating the Rufous Fieldwren *Calamanthus campestris*, 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 Striated Fieldwren meets criteria for listing as Endangered 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 Striated Fieldwren is a small (12 cm), scrubwren-like, olive-brown songbird, heavily streaked, with a pale eyebrow and a cocked tail. It is darker and more olive than the Rufous Fieldwren *Calamanthus campestris*, and occupies coastal rather than arid habitats. It is smaller and more streaked than the Eastern Bristlebird *Dasyornis brachypterus*, and has a shorter tail with a white tip. It is more streaked than scrubwrens *Sericornis* species and heathwrens *Hylacola* species, and lacks the heathwrens' bright rufous rump. The Little Grassbird *Megalurus gramineus* has a longer, unmarked tail.

### Taxonomy:

*Calamanthus fuliginosus* (Vigors & Horsfield 1827) is an endemic Australian genus and endemic Australasian family (Acanthizidae). The taxon in NSW is the subspecies *C. f. albiloris*, which also occurs in south-eastern Victoria. The Rufous Fieldwren *C. campestris*, of arid western NSW, was recently separated as a full species from the Striated Fieldwren (Schodde & Mason 1999; Christidis & Boles 2008).

### Distribution and number of populations:

In NSW, the Striated Fieldwren is restricted to the south-east coast, from the Victorian border to the Blue Mountains (Higgins & Peter 2002), with a suggestion of three or four populations (Figure 1). There are no recent records for the northern Blue Mountains or Botany Bay, where small and isolated populations were recorded in the 1970s. The species is now considered to occur south of the Clyde River, rarely north of Jervis Bay, with main populations in Morton National Park and Ben Boyd National Park/Nadgee Nature Reserve (Higgins & Peter 2002).

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

## **Ecology:**

The level of knowledge on the general ecology of this species is considered moderate, but poor on social organisation and breeding biology (Higgins & Peter 2002).

### Key habitat requirements

The Striated Fieldwren inhabits low, dense vegetation, especially heathland in NSW, but also sedgeland, samphire and tussock grassland, often bordering wetlands (*e.g.* swamps, lagoons, saltmarsh). Its habitat is vulnerable to wildfire.

### Breeding biology

The Striated Fieldwren builds a domed nest of plant fibres on or near the ground, in or at the base of low shrubs or grass tussocks. A clutch of three or four eggs is laid from late winter to 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 Speckled Warbler *Chthonicola sagittata*); the post-fledging dependence period is probably one month (as for the Rufous Fieldwren). Low nests are vulnerable to predation by cats and foxes, disturbance by livestock, and to fire.

### Diet

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

### Social biology

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

### Territoriality/home range

Sedentary pairs of Striated Fieldwrens are thought to maintain exclusive breeding territories, of 0.2-0.8 ha; neighbouring singing males occur about 50 m apart in dense populations (Higgins & Peter 2002).

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## Generation length

The generation length is estimated as four years for the similar Rufous Fieldwren (Garnett & Crowley 2000).

## Ability to disperse/susceptibility to population fragmentation

The Striated Fieldwren is a rather weak, short-distance flyer, with limited dispersal capability; northern populations appear to be fragmented (Higgins & Peter 2002).

## **Number of mature individuals:**

The number of mature individuals of the Striated Fieldwren is unknown for NSW, but presumed to be moderately low; it is recorded at “sparsely scattered sites” in NSW (Higgins & Peter 2002). Density is 0.6 bird/ha in its NSW stronghold (Nadgee Nature Reserve and Ben Boyd National Park), and lower in other parts of its range (Victoria and Tasmania: 0.06-0.34 bird/ha: Higgins & Peter 2002). Based on estimates of extent of occurrence and area of occupancy (see below) and assuming that a mean density of between 0.1 and 0.3 birds per hectare (about 0.2 birds/ha) may now apply in most of its NSW range (*cf.* Higgins & Peter 2002), there may be 8 100 birds in NSW. An average density is used because reporting rates at Nadgee have approximately halved, and the lowest reporting rates (less than 10% of surveys per grid) apply elsewhere in NSW and adjoining parts of Victoria (Barrett *et al.* 2003); see Population reduction, below.

## **Threats:**

Some habitat has been lost to urbanisation and agriculture. The main threat to remaining heathland habitat in NSW (much of which is now in reserves) is wildfire. Other threats include predation by cats and foxes, and weed invasion. ‘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 habitat of this species.

## **Population reduction and continuing declines:**

The species has declined in some parts of its mainland range (Higgins & Peter 2002). The small, isolated northern populations in the northern Blue Mountains (Bilpin) and around Botany Bay have disappeared. In recent decades, the Striated Fieldwren is believed to have undergone a reduction in population size in NSW, based on comparative evidence from broadscale surveys. In the first national bird atlas during 1977-1981 it occurred in five one-degree grids in NSW, at the lowest reporting rate (less than 10% of surveys per grid) except for the Nadgee grid where its reporting rate was high (more than 40% of surveys per grid: Blakers *et al.* 1984). In the second bird atlas during 1998-2002 it occurred in two southern grids (including Nadgee), at low reporting rates (Nadgee less than 20%, one other grid less than 10% of surveys per grid: Barrett *et*

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*al.* 2003). There were too few records in the atlases to statistically compare reporting rates in the two time periods (Barrett *et al.* 2007). Its extent of occurrence has declined by about 50% over 30 years (Blakers *et al.* 1984; Barrett *et al.* 2003), and area of occupancy, as an indicator of population, is inferred to have declined by a similar amount.

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

The calculated EOO polygon for this species is 3 427 km<sup>2</sup>, based on cumulative post-1980 records between Morton National Park and the Victorian border (excluding one doubtful Forests NSW record to the west at Currumbene State Forest). AOO values calculated for four geographic populations are 8, 19, 79 and 301 km<sup>2</sup> (407 km<sup>2</sup> total). The bird's occurrence is described as sparse and scattered (Higgins & Peter 2002).

## **Severe fragmentation:**

The species' habitat is fragmented in NSW, with some populations disjunct from others, particularly in the north of its range between Jervis Bay and Ben Boyd National Park where populations are sparse and scattered (Higgins & Peter 2002). Given the species' limited dispersal ability, its small, isolated northern populations around Sydney and the Blue Mountains (extinct in the past 30 years) are thought to have been connected to more southerly ones in the recent past. The species is therefore inferred to be susceptible to habitat and population fragmentation.

## **References:**

- Barrett G, Silcocks A, Barry S, Cunningham R, Poulter R (2003) 'The New Atlas of Australian Birds'. (RAOU: Melbourne)
- Barrett GW, Silcocks AF, Cunningham R, Oliver DL, Weston MA, Baker J (2007) Comparison of atlas data to determine the conservation status of bird species in New South Wales, with an emphasis on woodland-dependent species. *Australian Zoologist* **34**, 37-77.
- Blakers M, Davies SJF, Reilly PN (1984) 'The Atlas of Australian Birds'. Melbourne University Press: Melbourne)
- Christidis L, Boles WE (2008) 'Systematics and Taxonomy of Australian Birds'. (CSIRO: Melbourne)
- Garnett S, Crowley G (Eds) (2000) 'The Action Plan for Australian Birds 2000'. (Environment Australia: Canberra)
- Higgins PJ, Peter JM (Eds) (2002) 'Handbook of Australian, New Zealand and Antarctic birds', vol. 6. (Oxford University Press: Melbourne)
- Schodde R, Mason IJ (1999) 'The Directory of Australian Birds: Passerines'. (CSIRO: Melbourne)

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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](http://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:

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