

Conservation Advice

Atrichornis rufescens

rufous scrub-bird

Taxonomy

Conventionally accepted as *Atrichornis rufescens* (rufous scrub-bird) Ramsay, 1867. There are two accepted subspecies of rufous scrub-bird, the northern (*A. r. rufescens*) and the southern (*A. r. ferrieri*) variants.

Conservation status

Endangered: Criterion 2 B2,(a),(b)(ii)(iv)(v).

Species can also be listed as threatened under state and territory legislation. For information on the listing status of this species under relevant state or territory legislation, see <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Reason for conservation assessment by the Threatened Species Scientific Committee

This advice follows assessment of information provided by a Committee nomination based on information provided in the *Action Plan for Australian Birds 2010*, as developed by Birdlife Australia (Garnett et al., 2011).

Description

The rufous scrub-bird is a small (17-18.5cm), dark-coloured ground-dwelling bird with short rounded wings, long rounded tail, strong legs and a short wedge-shaped bill merging into long flat forehead. Adults are mostly dark rufous-brown with faint darker barring, and with a buff belly. The male has an obvious blackish triangle on chin, throat and breast joining large blackish patches on sides of upper belly and a white strip along sides of chin and throat (Higgins et al., 2001).

There is little difference in plumage between the two subspecies and only minor morphological differences (e.g., the tarsus of males is shorter in the southern than in the northern sub-species) (Schodde & Mason, 1999). However, there is a difference in song patterns between the two subspecies (QPWS, 2006).

Distribution

The species occurs in high-rainfall areas above 600 m sea level in south-eastern Queensland and north-eastern New South Wales. *A. r. rufescens* occurs in the Gibraltar Ranges, Border Ranges, the northern part of the McPherson Range and in parts of the Main Range, but formerly occurred in lowland habitats of the Richmond and Tweed River basins. *A. r. ferrieri* occurs on Barrington Tops, Hastings Range and in the Dorrigo/Ebor area. Some subpopulations of *A. r. rufescens* are thought to have disappeared within the last 2 decades, including those at Mt Warning and Spicers Gap (Garnett et al., 2011).

Relevant Biology/Ecology

Rufous scrub-birds occur in rainforests above 600m elevation, including subtropical, warm temperate and cool temperate rainforests, and nearby moist and wet eucalypt forests. They require dense ground cover, a moist microclimate at ground level and abundant leaf litter, which is usually restricted to ecotones, forested watercourses and wetlands, and areas regenerating from fires, storms or along roadsides. They forage on small invertebrates, including snails and insects, on the ground and over fallen logs, amongst leaf litter and on other ground vegetation and debris, within the dense understorey (Higgins et al., 2001). A generation time of 4.9 years (BirdLife International, 2011) is derived from an age at first breeding of 2.0 years and a

maximum longevity in the wild of 7.8 years, both values extrapolated from the noisy scrub-bird (*A. clamosus*).

Threats

Eucalypt forest habitat, which supports the majority of the population and buffers wetter refuges, is potentially threatened by wild fires in dry periods (Ferrier, 1984). Declines in density may also occur naturally as vegetation matures and ground cover provides less shelter, so some fire or other disturbance such as storms is helpful as the recovering habitat is readily used by the birds. Climate change, involving drier conditions, particularly prolonged sequences of drought leading into and during breeding seasons, could impair reproductive capacity. Drier conditions may also cause a contraction in range to core areas of wetter high altitude habitat. In the longer term, however, the viability of the small remaining populations may be questionable. Most of the bird's lowland habitat was cleared in the 19th century, and, while clearance itself is not a continuing threat with almost all birds being in protected areas, the subdivision of a small population into even smaller fragments makes each subpopulation more susceptible to random events (Garnett et al., 2011). Passive management of protected scrub-bird habitat eliminates anthropogenic activities that open up the canopy, creating suitable understorey conditions. Rufous scrub-birds may also be susceptible to impacts from disturbance by tourism or bird watching activities, particularly the use of playbacks to locate the species.

How judged by the Committee in relation to the EPBC Act Criteria and Regulations

Criterion 1: Reduction in numbers (based on any of A1 – A4)

- A1. An observed, estimated, inferred or suspected population very severe $\geq 90\%$, severe $\geq 70\%$ or substantial $\geq 50\%$ size reduction over the last 10 years or three generations, whichever is the longer, where the causes of the reduction are clearly reversible AND understood AND ceased, based on (and specifying) any of the following:
- (a) direct observation
 - (b) an index of abundance appropriate to the taxon
 - (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
 - (d) actual or potential levels of exploitation
 - (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.
- A2. An observed, estimated, inferred or suspected population very severe $\geq 80\%$, severe $\geq 50\%$ or substantial $\geq 30\%$ size reduction over the last 10 years or three generations, whichever is the longer, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.
- A3. A population size reduction very severe $\geq 80\%$, severe $\geq 50\%$ or substantial $\geq 30\%$, projected or suspected to be met within the next 10 years or three generations (up to a maximum of 100 years), whichever is the longer, based on (and specifying) any of (b) to (e) under A1.
- A4. An observed, estimated, inferred, projected or suspected population size reduction very severe $\geq 80\%$, severe $\geq 50\%$ or substantial $\geq 30\%$ over any 10 year or three generation period (up to a maximum of 100 years into the future), whichever is longer, where the time period must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on (and specifying) any of (a) to (e) under A1.

Evidence

Not applicable: past, current or future population declines are thought unlikely to exceed 30% in any three generation period.

In the early 19th century, the population size was probably about 12 000 pairs, but surveys from 1979–1983 estimated population size at about 2450 pairs; *A. r. rufescens* numbering 730 pairs and *A. r. ferrieri* 1720 pairs (Ferrier, 1984). Recent surveys in the Gloucester Tops and Border Ranges National Parks found that populations in these core regions are likely to be relatively stable (Newman et al., 2014) but overall declines are still suspected in both subspecies (Ekert, 2005). However, these declines are not thought likely to exceed 30% in any three generation period (Garnett et al., 2011).

Criterion 2: Geographic distribution (based on either of B1 or B2)

- B1. Extent of occurrence estimated to be very restricted <100 km², restricted <5000 km² or limited <20 000 km²
- B2. Area of occupancy estimated to be very restricted <10 km², restricted <500 km² or limited <2000 km²

AND

Geographic distribution is precarious for the survival of the species,
(based on at least two of a–c)

- a. Severely fragmented or known to exist at a limited location.
- b. Continuing decline, observed, inferred or projected, in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) area, extent and/or quality of habitat
 - (iv) number of locations or subpopulations
 - (v) number of mature individuals.
- c. Extreme fluctuations in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) number of locations or subpopulations
 - (iv) number of mature individuals

Evidence

Eligible for listing as Endangered: the predicted area of occupancy is restricted, the populations are severely fragmented and there has been an inferred continuing decline in area of occupancy, number of locations, and number of mature individuals.

The predicted area of occupancy is 410 km² (Garnett et al., 2011), which is classified as restricted. The species was once thought to be widespread in the high rainfall areas of northern New South Wales and southern Queensland, but is now restricted to areas above 600 m as the lowland habitat has been mostly cleared for grazing (Garnett et al., 2011). This has resulted in a severely fragmented population (approximately 6 sub-populations) spread across numerous (>20) locations.

Some subpopulations of the northern subspecies are thought to have disappeared within the last two decades, including those at Mt Warning and Spicers Gap (Garnett et al., 2011); while the southern subspecies is believed to have gone from several areas where they were once common in New England National Park. Recent surveys at Gloucester Tops found that although the numbers appeared stable in the core habitat areas above 600 m, there was a general failure to find any territories at lower altitudes and in areas burnt by wildfire (Newman et al., 2014). Surveys of the Border Ranges National Park found evidence of a decline in the density of breeding territories between 1981 and 2012 (Newman et al., 2014). Areas outside of the core range of the rufous scrub-bird have been poorly surveyed since the early 1980s and it is likely that declines in these non-core regions are greater than currently thought.

Criterion 3: The estimated total number of mature individuals is very low <250, low <2500 or limited <10 000; **and** either of (A) or (B) is true

- (A) evidence suggests that the number will continue to decline at a very high (25% in 3 years or 1 generation (up to 100 years), whichever is longer), high (20% in 5 years or 2 generations (up to 100 years), whichever is longer) or substantial (10% in 10 years or 3 generations (up to 100), whichever is longer) rate; or
- (B) the number is likely to continue to decline and its geographic distribution is precarious for its survival (based on at least two of a – c):
 - a. Severely fragmented or known to exist at a limited location.
 - b. Continuing decline, observed, inferred or projected, in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) area, extent and/or quality of habitat
 - (iv) number of locations or subpopulations
 - (v) number of mature individuals.
 - c. Extreme fluctuations in any of the following:
 - (i) extent of occurrence
 - (ii) area of occupancy
 - (iii) number of locations or subpopulations
 - (iv) number of mature individuals.

Evidence

Eligible for listing as Vulnerable: the population size is considered limited (<10 000 mature individuals), the populations are severely fragmented and there has been an inferred continuing decline in area of occupancy, number of locations, and number of mature individuals.

The number of mature individuals is predicted to be 4900 and this is believed to be decreasing, although the rate of decline cannot be quantified (Garnett et al., 2011).

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Criterion 4: Estimated total number of mature individuals:

- (a) Extremely low <50
- (b) Very low <250
- (c) Low <1000

Evidence

Not applicable: The total number of mature individuals of rufous scrub-bird is approximately 4900 (with approximately 1500 in the northern subspecies and 3400 in the southern subspecies) which is not considered extremely low, very low or low. Therefore, the species (or subspecies) have not been demonstrated to have met the required element of this criterion.

Criterion 5: Probability of extinction in the wild based on quantitative analysis is at least:

- (a) 50% in the immediate future, 10 years or three generations (whichever is longer); or
- (b) 20% in the near future, 20 years or five generations (whichever is longer); or
- (c) 10% in the medium-term future, within 100 years.

Evidence

Not applicable: population viability analysis has not been undertaken.

Public Consultation

Notice of the proposed amendment was made available for public comment for 30 business days between 14 May 2014 and 30 June 2014. Any comments received that are relevant to the survival of the species have been considered by the Committee.

Recovery Plan

There should not be a recovery plan for *Atrichornis rufescens* as the remaining populations mostly occur in protected habitat and the primary anthropogenic threat to the species (clearance of suitable habitat) has mostly stopped. Approved conservation advice for the species provides sufficient direction to implement priority actions and mitigate against key threats.

Recovery and Impact avoidance guidance

Primary Conservation Objectives
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| <ol style="list-style-type: none">1. Stabilise the size of each subpopulation.2. Develop management plans to maintain habitat quality for each subpopulation.3. Expand the area of suitable habitat |
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Important populations

The rufous scrub-bird occurs in isolated populations along the Great Dividing Range from the Mistake Mountains in southern Queensland down to Barrington Tops in NSW. Six important sub-populations of rufous scrub-bird have been identified across this region. The more important populations occur in the Gibraltar Ranges, Border Ranges, the northern part of the McPherson Range, Barrington Tops, Hastings Range and in the Dorrigo/Ebor area.

Important habitat for the survival of the species

Rainforests above 600 m elevation, including subtropical, warm temperate and cool temperate rainforests, and nearby moist and wet eucalypt forests provide important habitat for the species. Rufous scrub-birds require dense ground cover which is usually restricted to ecotones, forested watercourses and wetlands, and areas regenerating from fires and storms or along roadsides. (Higgins et al., 2001).

Information required and research priorities

1. Information on the trends in distribution and population size across the range, including in non-core areas

Management actions required

1. Develop and implement fire management plans for all subpopulations
2. Assess whether experimental habitat manipulation is justified

Recommendations

- (i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the endangered category:

Atrichornis rufescens

- (ii) The Committee recommends that there should not be a recovery plan for this species.

Threatened Species Scientific Committee

03/09/2014

References cited in the advice

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