

NSW Threatened Species Scientific Committee

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Notice of and reasons for the Final Determination

The NSW Threatened Species Scientific Committee, established under the *Biodiversity Conservation Act 2016* (the Act), has made a Final Determination to list the bird, Southern Whiteface *Aphelocephala leucopsis* (Gould, 1841) as a VULNERABLE SPECIES in Part 3 of Schedule 1 of the Act. Listing of Vulnerable species is provided for by Part 4 of the Act.

The NSW Threatened Species Scientific Committee is satisfied that Southern Whiteface *Aphelocephala leucopsis* (Gould, 1841) has been duly assessed by the Commonwealth Threatened Species Scientific Committee under the Common Assessment Method (DCCEEW 2023). The acceptance of this assessment is provided for by Part 4.14 of the Act.

The NSW Threatened Species Scientific Committee accepts the assessment outcome of the Commonwealth Threatened Species Scientific Committee in its Conservation Advice for Southern Whiteface *Aphelocephala leucopsis* of Vulnerable under Criterion 1: A2bc+3c+4bc (DCCEEW 2023).

Summary of Conservation Assessment

Southern Whiteface *Aphelocephala leucopsis* (Gould, 1841) was found to be Vulnerable in accordance with the following provisions in the *Biodiversity Conservation Regulation 2017*: Clause 4.2 (1)(c)(2)(b)(c) because the species has undergone a moderate reduction in population size (30–50%) based on an observed decline in relative abundance and quality and extent of habitat in the last three generations.

The NSW Threatened Species Scientific Committee has found that:

1. The Southern Whiteface (Gould, 1841) (family Acanthizidae) is a small, stocky thornbill-like bird with a brown dorsum, white belly, dark brown wings and a black tail with narrow white tip (Schodde and Mason 1999). A grey wash on the belly is sometimes present, along with a grey or rufous tinge to the flanks. The species displays the characteristic facial markings of the genus: a white band across the forehead, with a darker streak along the top edge. Adult birds are approximately 11.5 cm in length with a cream-coloured eye, grey legs and a stubby dark grey bill of finch-like appearance (Schodde and Mason 1999). Adults are sexually monomorphic, while juveniles are distinguishable due to a lack of the black rear band on the face.
2. The Southern Whiteface occurs across most of mainland Australia south of the tropics, from the northeastern edge of the Western Australian wheatbelt, east to the Great Dividing Range (Schodde and Mason 1999). Although this assessment considers Southern Whiteface at the species level, two subspecies are recognised: *Aphelocephala leucopsis leucopsis* (South-east Southern Whiteface), found throughout south-eastern and central Australia and the only subspecies present in NSW; and *A. l. castaneiventris* (South-west Southern Whiteface) found in central

NSW Threatened Species Scientific Committee

and southern Western Australia (DCCEEW 2023). There is a broad hybrid zone between the two subspecies extending north from the western edge of the Nullarbor Plain. The northern boundary extends to about Carnarvon in the west, to the southern Northern Territory in central Australia, but is slightly further south in Queensland where the species is largely confined to the south-west of the Mitchell Grass Downs and along the southern state border (Schodde and Mason 1999).

3. The geographic distribution of the Southern Whiteface is widespread. The extent of occurrence (EOO) is estimated at 4,910,000 km² based on occurrence records from 2000–2021 (Australian Government 2021). The area of occupancy (AOO) is estimated at 80,000–140,000 km² using the number of 2 x 2 km grid cells within which the species has been recorded since 1990 (Ehmke *et al.* 2021).
4. There are currently estimated to be 477,000 (range 236,000–954,000) mature Southern Whiteface individuals in the wild (S Garnett pers. comm. 9 Nov 2021 in DCCEEW 2023). This estimate includes 67,000 (range 36,000–134,000) *Aphelocephala leucopsis castaneiventris* individuals and 410,000 (range 200,000–820,000) *A. l. leucopsis* individuals (S Garnett pers. comm. 9 Nov 2021 in DCCEEW 2023). These estimates are the product of the measure of AOO and the density recorded in 2 ha 20-minute surveys (*A. l. castaneiventris* 3.36 ± S.D. 2.50; *A. l. leucopsis* 3.42 ± SD 2.75; Birddata cited in Ehmke *et al.* 2021), with each 2 x 2 km grid cell assumed to indicate 4 ha of suitable habitat (Ehmke *et al.* 2021).
5. Southern Whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains (Higgins and Peter 2002). Southern Whitefaces are considered sedentary; however, records indicate that individuals may move into wetter areas outside of their normal range during drought years (Higgins and Peter 2002).
6. Southern Whitefaces forage almost exclusively on the ground, favouring habitat with low tree densities and an herbaceous understorey litter cover. Birds mainly feed on insects, spiders, and seeds, largely gleaned from the bare ground or leaf litter (Higgins and Peter 2002; Antos and Bennett 2006; Antos *et al.* 2008). Although the species typically forages in small groups of 2–8 individuals, birds may congregate in larger flocks during the non-breeding season, with as many as 70 birds recorded in foraging parties in winter (Higgins and Peter 2002). The species often participates in mixed species feeding flocks, particularly with other whiteface and thornbill species (DCCEEW 2023).
7. Breeding takes place from July to October throughout most of the species' range, however, the timing of breeding can be affected by rainfall in arid regions (Higgins and Peter 2002). Birds may breed outside of their usual season following sufficient rainfall or may not breed at all during drought. Birds build large bulky domed nest of grass, bark and roots, usually in a hollow or crevice, although sometimes in low bushes (Higgins and Peter 2002). Little is known about the species' social organisation. Nesting is often observed to involve pairs, but there have also been multiple occurrences of co-operative breeding recorded, with up to four adults participating in chick rearing (Higgins and Peter 2002). A clutch size of 3–4 eggs is

NSW Threatened Species Scientific Committee

typical. The length of the incubation period is unknown, but young fledge between 14–19 days after hatching (Higgins and Peter 2002). The generation length is estimated at 2.8 years (Bird *et al.* 2020).

8. South-east Southern Whitefaces are one of a suite of taxa often considered to be declining at a local level, including around western New South Wales (Reid 1999; Olsen *et al.* 2005) and they disappeared after the millennium drought in central New South Wales (Ellis and Taylor 2014). Trends in range-wide reporting rates for both subspecies since 2000 have been strongly and significantly negative (Ehmke *et al.* 2021). For South-west Southern Whitefaces, reporting rates in 2 ha 20-minute counts and 500 m radius area searches from 2000–2020 declined by 86% and 46%, respectively (2000–2009: -35% and -35%; 2010–2019: -49%, +3%; Ehmke *et al.* 2021). For south-east southern whitefaces, the equivalent figures were declines of 64% and 72% from 2000–2020 (2000–2009: -49% and -20%; 2010–2019: -57% and -65%; Ehmke *et al.* 2021). This is based on the most recent analysis of Ehmke *et al.* (2021) over earlier and localised studies (Lindenmayer *et al.* 2018, Barrett *et al.* 2002, 2007).
9. Overall, declines across the range of both subspecies are 30–50% every ten years (one generation 2.9 years) since 1999, with no suggestion that the declines are slowing (Ehmke *et al.* 2021).
10. Habitat loss and fragmentation is the most probable driver of the species' decline, with the greatest declines in parts of the species' range where there has been complete removal of native vegetation for intensive agriculture (Ehmke *et al.* 2021). 'Clearing of native vegetation' is recognised as a key threatening process under the Act.
11. Droughts may also have local impacts (Ellis and Taylor 2014) and are likely to become more frequent and severe (Evans *et al.* 2017). Modelling suggests optimal climatic conditions for the species will retract to the south (Garnett and Franklin 2014) because of rainfall reductions (Garnett *et al.* 2013). However, Whitefaces live in some of the driest and hottest parts of the country, yet they have declined in places that are generally far wetter (Ehmke *et al.* 2021).
12. Southern Whiteface *Aphelocephala leucopsis* (Gould, 1841) is not eligible to be listed as an Endangered or Critically Endangered species.
13. Southern Whiteface *Aphelocephala leucopsis* (Gould, 1841) is eligible to be listed as a Vulnerable species as, in the opinion of the NSW Threatened Species Scientific Committee, it is facing a high risk of extinction in Australia in the medium-term future as determined in accordance with the following criteria as prescribed by the *Biodiversity Conservation Regulation 2017*:

NSW Threatened Species Scientific Committee

Assessment against *Biodiversity Conservation Regulation 2017* criteria
 The Clauses used for assessment are listed below for reference.

Overall Assessment Outcome: Vulnerable under Clause 4.2 (1)(c)(2)(b)(c).

**Clause 4.2 – Reduction in population size of species
 (Equivalent to IUCN criterion A)**

Assessment Outcome: Vulnerable under Clause 4.2 (1)(c)(2)(b)(c).

(1) - The species has undergone or is likely to undergo within a time frame appropriate to the life cycle and habitat characteristics of the taxon:			
	(a)	for critically endangered species	a very large reduction in population size, or
	(b)	for endangered species	a large reduction in population size, or
	(c)	for vulnerable species	a moderate reduction in population size.
(2) - The determination of that criteria is to be based on any of the following:			
	(a)	direct observation,	
	(b)	an index of abundance appropriate to the taxon,	
	(c)	a decline in the geographic distribution or habitat quality,	
	(d)	the actual or potential levels of exploitation of the species,	
	(e)	the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.	

**Clause 4.3 - Restricted geographic distribution of species and other conditions
 (Equivalent to IUCN criterion B)**

Assessment Outcome: Not met.

The geographic distribution of the species is:			
	(a)	for critically endangered species	very highly restricted, or
	(b)	for endangered species	highly restricted, or
	(c)	for vulnerable species	moderately restricted,
and at least 2 of the following 3 conditions apply:			
	(d)	the population or habitat of the species is severely fragmented or nearly all the mature individuals of the species occur within a small number of locations,	
	(e)	there is a projected or continuing decline in any of the following:	
		(i)	an index of abundance appropriate to the taxon,
		(ii)	the geographic distribution of the species,
		(iii)	habitat area, extent or quality,
		(iv)	the number of locations in which the species occurs or of populations of the species,
	(f)	extreme fluctuations occur in any of the following:	
		(i)	an index of abundance appropriate to the taxon,

NSW Threatened Species Scientific Committee

	(ii)	the geographic distribution of the species,
	(iii)	the number of locations in which the species occur or of populations of the species.

Clause 4.4 - Low numbers of mature individuals of species and other conditions

(Equivalent to IUCN criterion C)

Assessment Outcome: Not met.

The estimated total number of mature individuals of the species is:		
(a)	for critically endangered species	very low, or
(b)	for endangered species	low, or
(c)	for vulnerable species	moderately low,
and either of the following 2 conditions apply:		
(d)	a continuing decline in the number of mature individuals that is (according to an index of abundance appropriate to the species):	
(i)	for critically endangered species	very large, or
(ii)	for endangered species	large, or
(iii)	for vulnerable species	moderate,
(e)	both of the following apply:	
(i)	a continuing decline in the number of mature individuals (according to an index of abundance appropriate to the species), and	
(ii)	at least one of the following applies:	
(A)	the number of individuals in each population of the species is:	
(I)	for critically endangered species	extremely low, or
(II)	for endangered species	very low, or
(III)	for vulnerable species	low,
(B)	all or nearly all mature individuals of the species occur within one population,	
(C)	extreme fluctuations occur in an index of abundance appropriate to the species.	

Clause 4.5 - Low total numbers of mature individuals of species

(Equivalent to IUCN criterion D)

Assessment Outcome: Not met.

The total number of mature individuals of the species is:		
(a)	for critically endangered species	extremely low, or
(b)	for endangered species	very low, or
(c)	for vulnerable species	low.

NSW Threatened Species Scientific Committee

**Clause 4.6 - Quantitative analysis of extinction probability
(Equivalent to IUCN criterion E)
Assessment Outcome: Data deficient.**

The probability of extinction of the species is estimated to be:		
(a)	for critically endangered species	extremely high, or
(b)	for endangered species	very high, or
(c)	for vulnerable species	high.

**Clause 4.7 - Very highly restricted geographic distribution of species–
vulnerable species
(Equivalent to IUCN criterion D2)
Assessment Outcome: Not met.**

For vulnerable species,	the geographic distribution of the species or the number of locations of the species is very highly restricted such that the species is prone to the effects of human activities or stochastic events within a very short time period.
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Senior Professor Kristine French
Chairperson
NSW Threatened Species Scientific Committee

Supporting Documentation:

Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2023) Conservation Advice for *Aphelocephala leucopsis* (southern whiteface). Department of Climate Change, Energy, the Environment and Water, Canberra, Australia.

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NSW Threatened Species Scientific Committee

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NSW Threatened Species Scientific Committee

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