



Conservation Advice for *Aphelocephala leucopsis* (southern whiteface)

In effect under the *Environment Protection and Biodiversity Conservation Act 1999* from 31 March 2023.

This document combines the approved conservation advice and listing assessment for the species. It provides a foundation for conservation action and further planning.



Aphelocephala leucopsis (Southern Whiteface) © Copyright, Imogen Warren

Conservation status

Aphelocephala leucopsis was assessed by the Threatened Species Scientific Committee to be eligible for listing as Vulnerable under criteria 1. The Committee's assessment is at Attachment A. The Committee's assessment of the species' eligibility against each of the listing criteria is:

- Criterion 1: A2bc+3c+4bc: Vulnerable
- Criterion 2: Not eligible
- Criterion 3: Not eligible
- Criterion 4: Not eligible
- Criterion 5: Insufficient data

The main factors that make the species eligible for listing in the Vulnerable category is that the population has declined substantially by an estimated 30 to 50% every ten years (one generation 2.9 years) since 1999, with no indication that the declines are slowing (Ehmke et al. 2021). Evidence for loss is now strong and is based largely on reporting rate data (Ehmke et al. 2021). There are currently estimated to be 477,000 (range 236,000–954,000) mature individuals in the wild (S Garnett pers. comm. 9 Nov 2021). This estimate includes 67,000 (range 36,000–134,000) *A. l. castaneiventris* individuals and 410,000 (range 200,000–820,000) *A. l. leucopsis* individuals (S Garnett pers. comm. 9 Nov 2021). The extent of occurrence (EOO) for the species is estimated to be 4,910,000 km² (Australian Government 2021) with a stable trend (Ehmke et al. 2021), however the area of occupancy (AOO) is contracting and is estimated to be 70,000 km² (range 34,400–140,000 km²) (Ehmke et al. 2021). Habitat loss and fragmentation is likely the cause of the species decline, especially in the parts of the species' range where there has been complete removal of habitat for intensive agriculture (Ehmke et al. 2021).

Species can also be listed as threatened under state and territory legislation. For information on the current listing status of this species under relevant state or territory legislation, see the [Species Profile and Threat Database](#).

Species information

Taxonomy

Conventionally accepted as *Aphelocephala leucopsis* (Gould 1841).

Two subspecies are recognised: *A. l. leucopsis* (south-east southern whiteface), the nominate subspecies found throughout south-eastern and central Australia; and *A. l. castaneiventris* (south-west southern whiteface) found in central and southern of Western Australia.

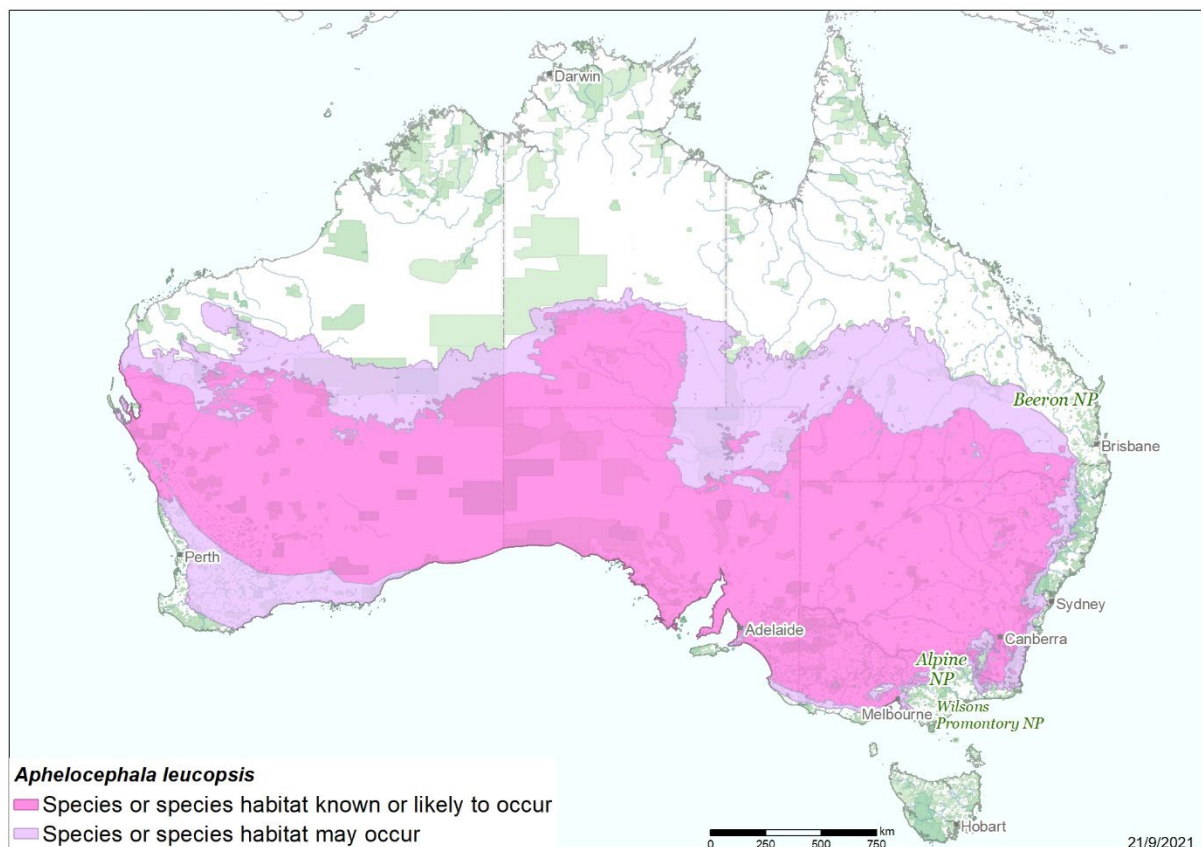
Description

The southern whiteface 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 & 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 & Mason 1999). Adults are sexually monomorphic, while juveniles are distinguishable due to a lack of black rear band on the face.

Distribution

Southern whiteface occur across most of mainland Australia south of the tropics, from the north-eastern edge of the Western Australian wheatbelt, east to the Great Dividing Range (Schodde & Mason 1999) (Map 1). 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 & Mason 1999).

Map 1 Modelled distribution of Southern Whiteface



Source: Base map Geoscience Australia; species distribution data [Species of National Environmental Significance](#) database.

Caveat: The information presented in this map has been provided by a range of groups and agencies. While every effort has been made to ensure accuracy and completeness, no guarantee is given, nor responsibility taken by the Commonwealth for errors or omissions, and the Commonwealth does not accept responsibility in respect of any information or advice given in relation to, or as a consequence of, anything contained herein.

Species distribution mapping: The species distribution mapping categories are indicative only and aim to capture (a) the habitat or geographic feature that represents to recent observed locations of the species (known to occur) or habitat occurring in close proximity to these locations (likely to occur); and (b) the broad environmental envelope or geographic region that encompasses all areas that could provide habitat for the species (may occur). These presence categories are created using an extensive database of species observations records, national and regional-scale environmental data, environmental modelling techniques and documented scientific research.

Cultural and community significance

Southern whitefaces are known to occur on the lands of over 100 Indigenous Peoples across southern mainland Australia (Ehmke et al. 2021). The cultural and community significance of the species is not known. Further research into the subject area may benefit the conservation of the species by providing insights into traditional land management.

This statement of significance is not intended to be comprehensive, applicable to, or speak for, all Indigenous Australians and it is acknowledged that Indigenous groups and individuals are the custodians of this knowledge.

Relevant biology and ecology

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 & Peter 2002).

Southern whitefaces are considered sedentary; however, atlas records indicate that individuals may move into wetter areas outside of their normal range during drought years (Higgins & Peter 2002).

Southern whiteface 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 & Peter 2002; Antos & 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 & Peter 2002). The species often participates in mixed species feeding flocks, particularly with other whiteface and thornbill species.

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 & 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 & 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 & Peter 2002). A clutch size of 3–4 eggs is typical. The length of the incubation period is unknown, but young fledge between 14–19 days after hatching (Higgins & Peter 2002). The generation length is estimated at 2.8 years (Bird et al. 2020).

Habitat critical to the survival

Habitat critical to the survival or important habitats of a species or ecological community refers to areas that are necessary:

- for activities such as foraging, breeding, roosting, or dispersal;
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators);
- to maintain genetic diversity and long-term evolutionary development; or
- for the reintroduction of populations or recovery of the species or ecological community.

Habitat critical to the survival of the Southern Whiteface includes areas of:

- relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both;
- habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat;
- living and dead trees with hollows and crevices which are essential for roosting and nesting.

Habitat critical to the survival should not be cleared, fragmented or degraded. Any known or likely habitat (Map 1) should be considered as habitat critical to the survival of the species. Additionally, areas that are not currently occupied by the species due to recent disturbance (e.g.

fire, grazing or human activity), but should become suitable again in the future, should also be considered habitat critical to the survival of the species.

Southern whiteface habitat occurs in a wide range of land ownership arrangements, including on private land, Indigenous Protected Areas, travelling stock routes and reserves, state forests and state reserves, and National Parks. It is essential that the highest level of protection is provided to these areas and that enhancement and protection measures target these productive sites.

No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat.

Threats

Habitat loss and fragmentation is likely the cause of the species decline, especially in the parts of the species' range where there has been complete removal of habitat for intensive agriculture (Ehmke et al. 2021). Droughts may have local impacts (Ellis & 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 & 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).

Table 1 Threats impacting Southern Whiteface

Threat	Status and severity ^a	Evidence
Habitat loss, degradation, and fragmentation		
Habitat loss caused by clearing for agriculture	• Status: current & future • Confidence: known • Consequence: moderate • Trend: increasing • Extent: across part of its range	The main threats to bird survival in agricultural areas is habitat loss caused by clearing of native vegetation, and subsequent degradation of the remnant vegetation (Stevens 2001). Since European settlement, over 80% of woodlands in south-east Australia have been cleared (Bradshaw 2012). Remaining remnants are generally isolated, small, and are often below the critical size needed to sustain healthy populations of many bird species (Olsen et al. 2005). As habitats become increasingly fragmented due to clearing, native birds become more vulnerable to other threats such as predation by feral species and destructive fires. Highly fragmented habitats also have reduced immigration rates, limiting the ability of source populations to recolonise once suitable habitat (Olsen et al. 2005). Habitat loss is a significant threat affecting some southern whiteface populations. For instance, the south-western subspecies is largely absent from areas with intensive agriculture. However, a study by Maron and Lill (2005) in Victoria found no effect of habitat fragment

Threat	Status and severity ^a	Evidence
		area, isolation, fragmentation, quality or vegetation complexity. Further research is needed to understand population dynamics in these areas. The precautionary principle should be applied to safeguard all known and potential suitable habitats.
Habitat degradation caused by domestic livestock grazing	• Status: historical, current & future • Confidence: known • Consequence: moderate • Trend: increasing • Extent: across part of its range	Native tree and shrub seedlings and grassy woodland groundcover species are highly susceptible to domestic livestock grazing. Unlike native herbivores, most domestic stock are hard-hoofed and cause significantly more damage to soil structure from compaction, and damage to native plants by trampling (Willson & Bignall 2009). This can lead to a reduction or removal of understorey habitat (e.g., native shrubs, herbs and grasses) which can reduce foraging and nesting sites, reduce shelter, and consequently increase the risk of predation for birds (Olsen et al. 2005). The other major influence of livestock grazing is its interaction with weed invasion (Martine & Alan 2005). Livestock grazing can exacerbate the spread of weeds through seed dispersal, soil and vegetation disturbance, and nutrient enrichment (Martine & Lill 2005).
Climate change		
Increased frequency or length of droughts	• Status: current & future • Confidence: known • Consequence: unknown • Trend: increasing • Extent: across the entire range	Parts of south-west, south-east, and eastern Australia—including parts of south-east Queensland and southern and eastern New South Wales—have seen substantial declines in cool-season rainfall in recent decades (BOM & CSIRO 2020). It is predicted that Australia will spend more time under drought conditions, with longer drought duration and more intense drought, particularly across southern and eastern Australia (Evans et al. 2017; Kirono et al. 2020). Droughts impact food resources (e.g., native grasses, nectar and arthropods) for a range of woodland birds in Australia, which, in turn, decreases bird abundance. Ellis and Taylor (2014) found that reporting rates for southern whiteface declined during the millennium drought; however, longer monitoring is needed to determine if these declines are short-term responses due to drought

Threat	Status and severity ^a	Evidence
		conditions or are responses to other long-term impacts (e.g., environmental deterioration). Modelling suggests optimal climatic conditions for the species will retract to the south (Garnett & 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. Further studies are needed to better understand the impact of drought on the species.
Increased likelihood of extreme events (i.e., wildfire, drought and heatwaves)	• Status: current & future • Confidence: known • Consequence: unknown • Trend: increasing • Extent: across the entire range	Since 1950, the number of record hot days (above 35°C) across Australia has more than doubled and the mean temperature has increased by about 1.4°C since 1910 (BOM & CSIRO 2020; IPCC 2021). Heatwaves are also lasting longer, reaching more extreme maximum temperatures, and are occurring more frequently over many regions of Australia, including south-eastern Australia (Perkins-Kirkpatrick et al. 2016; Evans et al. 2017; Herold et al. 2018; BOM & CSIRO 2020). Heatwaves also exacerbate drought, which in turn can also increase bushfire risk (Climate Council 2014) and adversely impact resource availability (BOM & CSIRO 2020). Birds are also vulnerable to extreme heatwaves that overwhelm their physiological limits (McKechnie et al 2012). It is not fully known how these weather events, or the cumulative effect of these weather events, affect southern whiteface survival and reproduction and its habitat. The precautionary principle should be applied to ensure suitable quality and quantity of habitat needed by the species is conserved across its known and suspected range.

Status—identify the temporal nature of the threat;

Confidence—identify the extent to which we have confidence about the impact of the threat on the species;

Consequence—identify the severity of the threat;

Trend—identify the extent to which it will continue to operate on the species;

Extent—identify its spatial content in terms of the range of the species.

Each threat has been described in Table 1 in terms of the extent that it is operating on the species. The risk matrix (Table 3) provides a visual depiction of the level of risk being imposed by a threat and supports the prioritisation of subsequent management and conservation actions. In preparing a risk matrix, several factors have been taken into consideration, they are: the life stage they affect; the duration of the impact; and the efficacy of current management regimes,

assuming that management will continue to be applied appropriately (Table 2). The risk matrix (Table 3) and ranking of threats has been developed in consultation with experts, community consultation and by using available literature.

Table 2 Risk prioritisation

Likelihood	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain	Low risk	Moderate risk	Very high risk	Very high risk	Very high risk
Likely	Low risk	Moderate risk	High risk	Very high risk	Very high risk
Possible	Low risk	Moderate risk	High risk	Very high risk	Very high risk
Unlikely	Low risk	Low risk	Moderate risk	High risk	Very high risk
Unknown	Low risk	Low risk	Moderate risk	High risk	Very high risk

Categories for likelihood are defined as follows:

Almost certain – expected to occur every year

Likely – expected to occur at least once every five years

Possible – might occur at some time

Unlikely – such events are known to have occurred on a worldwide basis but only a few times

Rare or Unknown – may occur only in exceptional circumstances; OR it is currently unknown how often the incident will occur

Categories for consequences are defined as follows:

Not significant – no long-term effect on individuals or populations

Minor – individuals are adversely affected but no effect at population level

Moderate – population recovery stalls or reduces

Major – population decreases

Catastrophic – population extinction

Table 3 Southern Whiteface risk matrix

Likelihood	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain			Habitat degradation caused by domestic livestock grazing	Habitat loss caused by clearing for agriculture	
Likely		Increased frequency or length of droughts	Increased likelihood of extreme events (i.e., wildfire and heatwaves)		
Possible					
Unlikely					
Unknown					

Priority actions have been developed to manage the threat particularly where the risk was deemed to be ‘very high’ or ‘high’. For those threats with an unknown or low risk outcome it may be more appropriate to identify further research or maintain a watching brief.

Conservation and recovery actions

Primary conservation outcome

- Stable population trends in both subspecies.
- The causes of current population declines are understood.

Conservation and management priorities

Habitat loss caused by clearing for agriculture

- Cease all land clearing of habitat critical to the survival of southern whiteface.
- Secure occupied habitat patches in areas where the birds have a patchy distribution from further degradation and loss.
- Undertake revegetation, using a diverse mix of locally appropriate native species, focussing on expanding and connecting areas of existing habitat or widening wildlife corridors wherever possible. Where appropriate:
 - Establish new habitat patches in areas where native vegetation cover is lacking.
 - Target the productive lower parts of the landscape which may provide important drought refuges. To maximise these benefits, riparian plantings should be at least 50 m wide.
- Promote ecological management and connectivity of woodland remnants on public and private land.
- Promote the uptake of agriculture and biodiversity stewardship programs to retain southern whiteface habitat.

Habitat degradation caused by domestic livestock grazing

- Prevent intensive over-grazing in high value habitats (see *Habitat Critical to the Survival* section).
- Modify grazing management practices that will maintain or improve habitat values and still allow some grazing to occur at strategic times of the year.

Stakeholder engagement/community engagement

- Raise awareness among landholders in areas known to be important for the species, to engage them in proactive management and monitoring of the species' population on their land.
- Promote ecological management and connectivity of woodland remnants on public and private land.
- Coordinate recovery efforts among different jurisdictions and stakeholders.
- Target in-perpetuity covenants or stewardship agreements to landholders with high quality remnant woodland habitat.
- Support community education programs to achieve regional conservation outcomes.
- Engage landholders to adopt appropriate grazing regimes.

Survey and monitoring priorities

- Monitor long term trends and status of the species.
- Use climate modelling techniques to investigate the potential impacts of climate change (e.g., increased likelihood of extreme events or increased frequency and length of drought) on the species and their habitat critical for survival.

Information and research priorities

- Determine reasons for population declines.
- Understand demography, breeding success and movement ecology with respect to climate variables.
- Develop appropriate management interventions for each subspecies.

Recovery plan decision

A decision has been made to have a Recovery Plan due to the complex jurisdictional situation and the conservation planning resources required to develop the plan. A Recovery Plan is considered likely to provide additional conservation benefits and is therefore required for this species.

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THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

The Threatened Species Scientific Committee finalised this assessment on 2 June 2022.

Attachment A: Listing Assessment for *Aphelocephala leucopsis*

Reason for assessment

Prioritisation of a nomination from the TSSC.

Assessment of eligibility for listing

This assessment uses the criteria set out in the [EPBC Regulations](#). The thresholds used correspond with those in the [IUCN Red List criteria](#) except where noted in criterion 4, sub-criterion D2. The IUCN criteria are used by Australian jurisdictions to achieve consistent listing assessments through the Common Assessment Method (CAM).

Key assessment parameters

Table 4 includes the key assessment parameters used in the assessment of eligibility for listing against the criteria.

Table 4 Key assessment parameters

Metric	Estimate used in the assessment	Minimum plausible value	Maximum plausible value	Justification
Number of mature individuals	477,000	236,000	954,000	The population estimates of the two southern whiteface subspecies (67,000 (36,000-134,000) <i>A. l. castaneiventris</i>, and 410,000 (200,000-820,000) <i>A. l. leucopsis</i>) are the product of the three measures of AOO and the density recorded in 2 ha 20 min surveys (<i>A. l. castaneiventris</i> 3.36±SD 2.50; <i>A. l. leucopsis</i> 3.42± SD 2.75; Birddata cited in Ehmke et al. 2021). Each 2x2 km square contributing to the AOO is assumed to indicate 16 ha of suitable habitat (S Garnett pers. comm. 9 Nov 2021). The following assumptions are made in the estimates of the population size: • The AOO, which attributes 2x2 km of habitat to any point at which the species is recorded, is based only on sightings of birds that have been entered into the BirdLife Australia database (S Garnett pers. comm. 9 Nov 2021). Many areas occupied by the species are likely to be unrecorded. From some, however, the birds may have disappeared since the record was made. For this reason, the AOO has wide error margins (S Garnett pers. comm. 9 Nov 2021). • The area surveyed within any part of the AOO is likely to be small

Metric	Estimate used in the assessment	Minimum plausible value	Maximum plausible value	Justification
				relative to the total 2x2 km assumed to be occupied (S Garnett pers. comm. 9 Nov 2021). In some 2x2 km AOO squares, the entire area will be suitable habitat and occupied. In others, only a fragment of occupied habitat may remain. For there to be a record at all must mean there is 2 ha of habitat in which the species was present in at least part at the time of the survey (S Garnett pers. comm. 9 Nov 2021). The population estimates assume that double that area is available within every 2x2 km, which is deliberately highly conservative (S Garnett pers. comm. 9 Nov 2021). The density is based on surveys in which observers have noted the number of individuals they have seen during a survey. The number of individuals recorded during surveys is highly variable (S Garnett pers. comm. 9 Nov 2021). The reliability of this population estimate is low (S Garnett pers. comm. 9 Nov 2021).
Trend	Declining			The species has been long marked as declining, the evidence for loss is now strong and based largely on reporting rates (Ehmke et al. 2021).
Generation time (years)	2.8	2.1	3.5	Bird et al. (2020). The reliability of this estimate is low.
Extent of occurrence	4,910,000 km ²			The EOO was calculated using occurrence records from 2000–2021 (Australian Government 2021).
Trend	Stable			The EOO trends for both subspecies is estimated to be stable (Ehmke et al. 2021). The reliability of this estimate is low.
Area of Occupancy	80,000 km ²	65,000 km ²	140,000 km ²	The minimum AOO is the number of 2x2 km squares within which they have been recorded since 1990 (Ehmke et al. 2021). The reliability of this estimate is low.
Trend	Contracting			Trends in range-wide reporting rates for both subspecies since 2000 have been strongly negative with a high level of significance (Ehmke et al. 2021). The reliability of this estimate is high.
Number of subpopulations	1	1	1	Ehmke et al. (2021). The reliability of this estimate is low.
Trend	Stable			Ehmke et al. (2021). The reliability of this estimate is high.
Basis of assessment of	There are no impediments to dispersion across the large ranges of either subspecies, so both are assumed to be panmictic (Ehmke et al. 2021).			

Metric	Estimate used in the assessment	Minimum plausible value	Maximum plausible value	Justification
subpopulation number				
No. locations	>10			Ehmke et al. (2021)
Trend	Not calculated			Ehmke et al. (2021)
Basis of assessment of location number	The spatial nature of the threats, even though stochastic in space and time, is such that there are >10 geographically or ecologically distinct areas where a single threatening event could affect all individuals of either taxon present within a period of three years (Ehmke et al. 2021).			
Fragmentation	Not severely fragmented (Ehmke et al. 2021).			
Fluctuations	Not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals (Ehmke et al. 2021).			

Criterion 1 Population size reduction

Reduction in total numbers (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered Very severe reduction	Endangered Severe reduction	Vulnerable Substantial reduction
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%
A1	Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased. Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible. Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3] An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.		(a) direct observation [except A3]
A2			(b) an index of abundance appropriate to the taxon
A3			(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat
A4			(d) actual or potential levels of exploitation
			(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

Criterion 1 evidence

Eligible under Criterion 1 A2bc+3c+4bc for listing as Vulnerable

Southern whitefaces occur across most of mainland Australia south of the tropics from the north-eastern edge of the Western Australian wheatbelt east to the Great Dividing Range. 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 & Mason 1999).

Reporting rate data can be used to determine bird species abundance. Data used in trend analyses are limited to standardised bird surveys drawn from discrete (spatially separated) sites which have multiple repeat observations over time. 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 min 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%). For south-east southern whitefaces, the equivalent figures were 64% and 72% from 1999–2000 (2000–2009: -49% and -20%; 2010–2019: -57% and -65%). South-east southern whitefaces are one of a suite of taxa often considered to be declining at a local level, including around Adelaide, western New South Wales and northern Victoria (Paton et al. 1994; Reid 1999; Olsen et al. 2005) and they disappeared after the millennium drought in central New South Wales (Ellis & Taylor 2014). Trend analysis over the 21-year period 1998–2019 showed a small decline in the Australian Capital Territory, with the rate of decline statistically significant over the period 2009–2014 (Bounds et al. 2021). There is a low reporting rate for this species, which now occurs in very low numbers at a small number of locations. There are no comparable regional data for south-west southern whitefaces.

However, reporting rates for some periods, and from some localities, have not been negative. Reporting rates were stable between the first Australian Bird Atlas (1977–1981) and the second (1998–2001) for the whole species (Barrett et al. 2002); in New South Wales reporting rates in less wooded bioregions increased between Atlases (Barrett et al. 2007); there was no significant change in reporting rates from 2 ha 20 min surveys for 1999–2013 for the Arid Zone and Mallee regions (BirdLife Australia 2015); or in surveys during 2000–2015 at over 165 sites in southern New South Wales (Lindenmayer et al. 2018). Reporting rates in the Australian Capital Territory show a four-fold fluctuation, with peaks around 1989 and 2009 and troughs in 2000 and 2017 (Canberra Ornithologists Group 2019).

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). There is no clear reason for declines in either southern whiteface subspecies, except in that part of the range where there has been complete removal of habitat for intensive agriculture (Ehmke et al. 2021).

The Committee considers that the species has undergone a substantial reduction in numbers over ten years (one generation 2.9 years), which is equivalent to at least 30–50% and the reduction has not ceased, the cause has not ceased and is not understood. Therefore, the species has met the relevant elements of Criterion 1 to make it eligible for listing as Vulnerable.

Criterion 2 Geographic distribution as indicators for either extent of occurrence AND/OR area of occupancy

	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (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: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Criterion 2 evidence

Not eligible

Southern whiteface extent of occurrence (EOO) is estimated to be 4,910,000 km² (Australian Government 2021) with a stable trend (Ehmke et al. 2021), however the area of occupancy (AOO) is contracting and is estimated at 70,000 km² (range 34,400–140,000 km²) (Ehmke et al. 2021). The population is not considered severely fragmented and there are no impediments to dispersion across the large range of the species (Ehmke et al. 2021). The number of locations has not been calculated but is assumed to be greater than 10 (Ehmke et al. 2021). The spatial nature of the threats, even though stochastic in space and time, is such that there are thought to be more than 10 geographically or ecologically distinct areas where a single threatening event could affect all individuals of either taxon present within a period of 10 years (Ehmke et al. 2021). The species is not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals (Ehmke et al. 2021).

Following assessment of the data the Committee has determined that the species' geographic distribution is not precarious for its survival. Therefore, the species has not met this required element of this criterion.

Criterion 3 Population size and decline

	Critically Endangered Very low	Endangered Low	Vulnerable Limited
Estimated number of mature individuals	< 250	< 2,500	< 10,000
AND either (C1) or (C2) is true			
C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future)	Very high rate 25% in 3 years or 1 generation (whichever is longer)	High rate 20% in 5 years or 2 generations (whichever is longer)	Substantial rate 10% in 10 years or 3 generations (whichever is longer)
C2. An observed, estimated, projected or inferred continuing decline AND its geographic distribution is precarious for its survival based on at least 1 of the following 3 conditions:			
(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(a) (ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals			

Criterion 3 evidence

Not eligible

There are currently estimated to be 477,000 (range 236,000–954,000) mature individuals in the wild (S Garnett pers. comm. 9 Nov 2021) with a declining trend (Ehmke et al. 2021). This estimate includes 67,000 (range 36,000–134,000) *A. l. castaneiventris* individuals and 410,000 (range 200,000–820,000) *A. l. leucopsis* individuals. The reliability of all population estimates is very low (S Garnett pers. comm. 9 Nov 2021). The population estimates of the two subspecies are the product of the three measures of AOO and the density recorded in 2 ha 20 min surveys (*A. l. castaneiventris* 3.36±SD 2.50; *A. l. leucopsis* 3.42± SD 2.75; Birddata cited in Ehmke et al. 2021). The species is not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals (Ehmke et al. 2021).

The total number of mature individuals is not considered low. Therefore, the species does not meet the required element of this criterion.

Criterion 4 Number of mature individuals

	Critically Endangered Extremely low	Endangered Very Low	Vulnerable Low
D. Number of mature individuals	< 50	< 250	< 1,000
D2.¹ Only applies to the Vulnerable category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time			D2. Typically: area of occupancy < 20 km ² or number of locations ≤ 5

¹ The IUCN Red List Criterion D allows for species to be listed as Vulnerable under Criterion D2. The corresponding Criterion 4 in the EPBC Regulations does not currently include the provision for listing a species under D2. As such, a species cannot currently be listed under the EPBC Act under Criterion D2 only. However, assessments may include information relevant to D2. This information will not be considered by the Committee in making its recommendation of the species' eligibility for listing under the EPBC Act, but may assist other jurisdictions to adopt the assessment outcome under the [common assessment method](#).

Criterion 4 evidence

Not eligible

There are currently estimated to be 477,000 (range 236,000–954,000) mature individuals in the wild (S Garnett pers. comm. 9 Nov 2021) with a declining trend (Ehmke et al. 2021). This estimate includes 67,000 (range 36,000–134,000) *A. l. castaneiventris* individuals and 410,000 (range 200,000–820,000) *A. l. leucopsis* individuals. The reliability of all population estimates is very low (S Garnett pers. comm. 9 Nov 2021). The population estimates of the two subspecies are the product of the three measures of AOO and the density recorded in 2 ha 20 min surveys (*A. l. castaneiventris* 3.36±SD 2.50; *A. l. leucopsis* 3.42± SD 2.75; Birddata cited in Ehmke et al. 2021).

The total number of mature individuals is not considered low. Therefore, the species does not meet the required elements of this criterion.

Criterion 5 Quantitative analysis

	Critically Endangered Immediate future	Endangered Near future	Vulnerable Medium-term future
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

Criterion 5 evidence

Insufficient data to determine eligibility

Population viability analysis has not been undertaken. Therefore, there is insufficient information to determine the eligibility of the species for listing in any category under this criterion.

Adequacy of survey

The survey effort has been considered adequate and there is sufficient scientific evidence to support the assessment.

Public consultation

Notice of the proposed amendment and a consultation document was made available for public comment for 49 business days between 28 January 2022 and 18 March 2022.

Listing and Recovery Plan Recommendations

The Threatened Species Scientific Committee recommends:

- (i) that the list referred to in section 178 of the EPBC Act be amended by **including** *Aphelocephala leucopsis* in the list in the Vulnerable category.
- (ii) that there should be a recovery plan for this species.

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