



## Consultation Document on Listing Eligibility and Conservation Actions

### *Climacteris picumnus victoriae* (Brown Treecreeper (south-eastern))

You are invited to provide your views and supporting reasons related to:

- 1) the eligibility of *Climacteris picumnus victoriae* (Brown Treecreeper (south-eastern)) for inclusion on the EPBC Act threatened species list in the Vulnerable category; and
- 2) the necessary conservation actions for the above species.

Evidence provided by experts, stakeholders and the general public are welcome. Responses can be provided by any interested person.

Anyone may nominate a native species, ecological community or threatening process for listing under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or for a transfer of an item already on the list to a new listing category. The Threatened Species Scientific Committee (the Committee) undertakes the assessment of species to determine eligibility for inclusion in the list of threatened species and provides its recommendation to the Australian Government Minister for the Environment.

Responses are to be provided in writing either by email to:

[species.consultation@environment.gov.au](mailto:species.consultation@environment.gov.au)

or by mail to:

The Director  
Migratory Species Section  
Biodiversity Conservation Division  
Department of Agriculture, Water and the Environment  
PO Box 858  
Canberra ACT 2601

**Responses are required to be submitted by 18 March 2022.**

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## **General background information about listing threatened species**

The Australian Government helps protect species at risk of extinction by listing them as threatened under Part 13 of the EPBC Act. Once listed under the EPBC Act, the species becomes a Matter of National Environmental Significance (MNES) and must be protected from significant impacts through the assessment and approval provisions of the EPBC Act. More information about threatened species is available on the department's website at: <http://www.environment.gov.au/biodiversity/threatened/index.html>.

Public nominations to list threatened species under the EPBC Act are received annually by the Department. In order to determine if a species is eligible for listing as threatened under the EPBC Act, the Threatened Species Scientific Committee (the Committee) undertakes a rigorous scientific assessment of its status to determine if the species is eligible for listing against a set of criteria. These criteria are available on the Department's website at: <http://www.environment.gov.au/system/files/pages/d72dfd1a-f0d8-4699-8d43-5d95bbb02428/files/tssc-guidelines-assessing-species-2018.pdf>.

As part of the assessment process, the Committee consults with the public and stakeholders to obtain specific details about the species, as well as advice on what conservation actions might be appropriate. Information provided through the consultation process is considered by the Committee in its assessment. The Committee provides its advice on the assessment (together with comments received) to the Minister regarding the eligibility of the species for listing under a particular category and what conservation actions might be appropriate. The Minister decides to add, or not to add, the species to the list of threatened species under the EPBC Act. More detailed information about the listing process is at: <http://www.environment.gov.au/biodiversity/threatened/nominations.html>.

To promote the recovery of listed threatened species and ecological communities, conservation advices and where required, recovery plans are made or adopted in accordance with Part 13 of the EPBC Act. Conservation advices provide guidance at the time of listing on known threats and priority recovery actions that can be undertaken at a local and regional level. Recovery plans describe key threats and identify specific recovery actions that can be undertaken to enable recovery activities to occur within a planned and logical national framework. Information about recovery plans is available on the department's website at: <http://www.environment.gov.au/biodiversity/threatened/recovery.html>.

## **Privacy notice**

The Department will collect, use, store and disclose the personal information you provide in a manner consistent with the Department's obligations under the *Privacy Act 1988* (Cwth) and the Department's Privacy Policy.

Any personal information that you provide within, or in addition to, your comments in the threatened species assessment process may be used by the Department for the purposes of its functions relating to threatened species assessments, including contacting you if we have any questions about your comments in the future.

Further, the Commonwealth, State and Territory governments have agreed to share threatened species assessment documentation (including comments) to ensure that all States and Territories have access to the same documentation when making a decision on

the status of a potentially threatened species. This is also known as the '[common assessment method](#)'. As a result, any personal information that you have provided in connection with your comments may be shared between Commonwealth, State or Territory government entities to assist with their assessment processes.

The Department's Privacy Policy contains details about how respondents may access and make corrections to personal information that the Department holds about the respondent, how respondents may make a complaint about a breach of an Australian Privacy Principle, and how the Department will deal with that complaint. A copy of the Department's Privacy Policy is available at: <http://environment.gov.au/privacy-policy>.

### **Information about this consultation process**

Responses to this consultation can be provided electronically or in hard copy to the contact addresses provided on Page 1. All responses received will be provided in full to the Committee and then to the Australian Government Minister for the Environment.

In providing comments, please provide references to published data where possible. Should the Committee use the information you provide in formulating its advice, the information will be attributed to you and referenced as a 'personal communication' unless you provide references or otherwise attribute this information (please specify if your organisation requires that this information is attributed to your organisation instead of yourself). The final advice by the Committee will be published on the department's website following the listing decision by the Minister.

Information provided through consultation may be subject to freedom of information legislation and court processes. It is also important to note that under the EPBC Act, the deliberations and recommendations of the Committee are confidential until the Minister has made a final decision on the nomination, unless otherwise determined by the Minister.



# Consultation document for *Climacteris picumnus victoriae* (Brown Treecreeper (south-eastern))

## Conservation status

*Climacteris picumnus victoriae* is being assessed by the Threatened Species Scientific Committee to be eligible for listing under the EPBC Act. The Committee's preliminary assessment is at Attachment A. The Committee's preliminary assessment of the subspecies' eligibility against each of the listing criteria is:

- Criterion 1: A2bce+3ce+4bce: Vulnerable
- Criterion 2: Not eligible
- Criterion 3: Not eligible
- Criterion 4: Not eligible
- Criterion 5: Insufficient data

The main factor that appears to make the subspecies eligible for listing in the Vulnerable category is that the population is estimated to have undergone a significant reduction in size (30–50%) in the last three generations (15 years) (Ford et al. 2021). There are now estimated to be 68,000 (range 36,000–113,000) mature individuals in the wild, though the reliability of this estimate is low (S Garnett pers. comm. 9 Nov 2021). The extent of occurrence (EOO) for the subspecies is estimated to be 1,100,000 km<sup>2</sup> (range 1,000,000–1,200,000 km<sup>2</sup>, stable trend), however the area of occupancy (AOO) is contracting and is estimated at 30,000 km<sup>2</sup> (range 24,000–50,000 km<sup>2</sup>) (Ford et al. 2021).

The subspecies has long been recognised as a declining member of the woodland avifauna (Ford et al. 2021). This decline is partially attributed to ongoing threats such as: increased predation from introduced mammals, invasive weeds, and exclusion by Noisy Miners (*Manorina melanocephala*) (Willson & Bignall 2009). Most of these threats are greater at habitat edges and so are exacerbated by habitat fragmentation. Grazing by stock, rabbits *Oryctolagus cuniculus*, and kangaroos (*Macropus* spp.) can also negatively affect the subspecies by preventing regeneration of native woodland habitat (Ford et al. 2021). The effect of these threats, combined with habitat loss and fragmentation from large-scale agriculture, inappropriate fire regimes, residential and commercial development, and inappropriate firewood collection and tidying of farmland have not ceased and may not be reversible (Ford 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 *Climacteris picumnus victoriae* (Matthews 1912).

Two other subspecies recognised; includes *C. p. melanotus* (LC) Cape York Peninsula, *C. p. picumnus* (LC) eastern Australia west of the Great Dividing Range from western Victoria and southern South Australia to coastal south-east Queensland north to Cape York Peninsula.

### Description

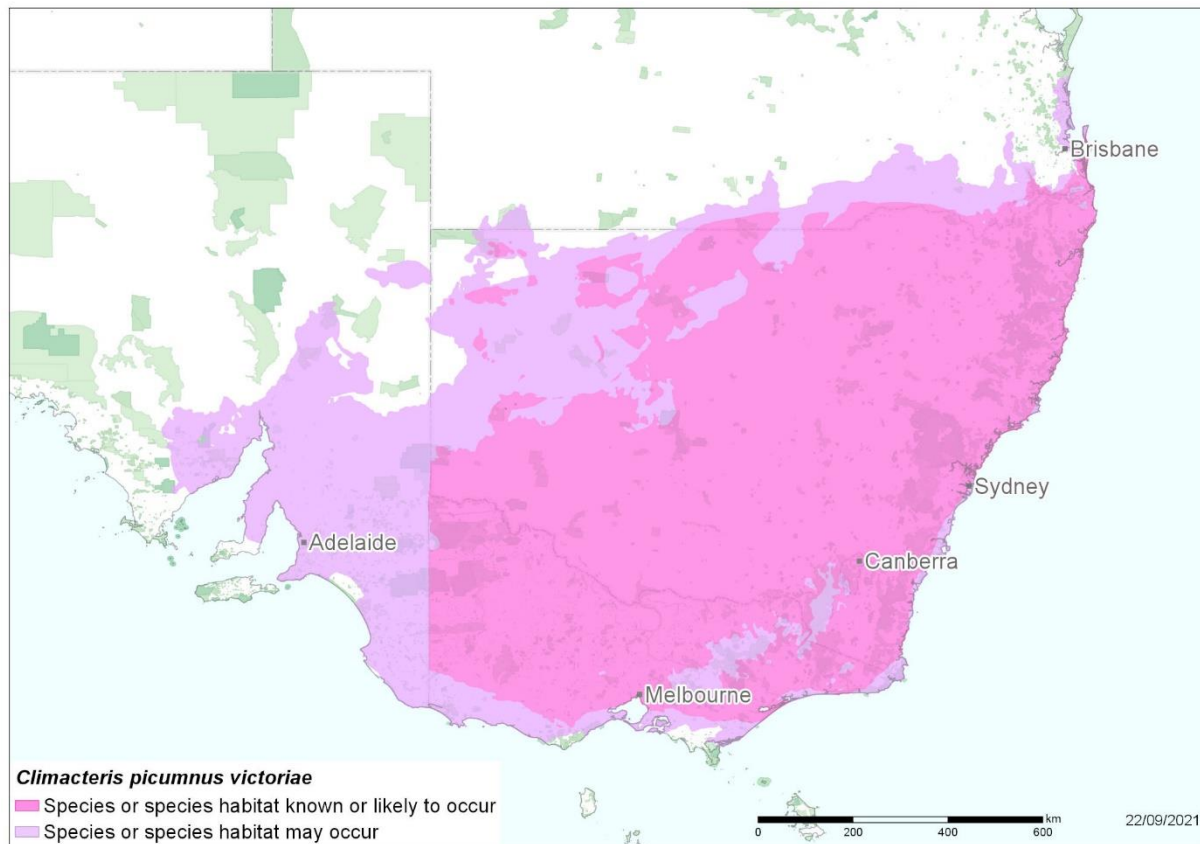
The Brown Treecreeper (south-eastern), Australia's largest treecreeper, is a grey-brown bird with black streaking on the lower breast and belly, and black bars on the undertail (Higgins & Peter 2002). Pale buff bands across the flight feathers are obvious in flight. The face is pale, with a dark line through the eye, and a dark crown (Higgins & Peter 2002). Sexes differ slightly in all plumages, with small patches of black and white streaking on the centre of the uppermost breast on males, while the females exhibit rufous and white streaking (Higgins & Peter 2002). Juveniles differ from adults mainly by the pattern of the under-body and by their pale bill and gape. Subspecies *victoriae* is distinguished from subspecies *picumnus* by colour differences on the face, body and tail markings. The two subspecies grade into each other through central NSW (Higgins & Peter 2002).

### Distribution

Brown Treecreepers (south-eastern) are endemic to south-eastern Australia from the Grampians in western Victoria, through central New South Wales to the Bunya Mountains in Queensland (Schodde & Mason 1999), and from the coast to the inland slopes of Great Dividing Range (Map 1). In NSW the western boundary of the range of *Climacteris picumnus victoriae* runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell and along this line the subspecies intergrades with the arid zone subspecies of Brown Treecreeper *C. p. picumnus* (DPIE 2017). The subspecies is less commonly found on coastal plains and ranges. While the overall range has not changed, the subspecies' failure to cross habitat gaps means it has been lost from many habitat fragments (Cooper & Walters 2002a; Ford et al. 2009).

The population density of Brown Treecreeper (south-eastern) has been greatly reduced over much of its range. Declines have occurred in remnant vegetation fragments smaller than 300 ha, that have been isolated or fragmented for more than 50 years (Ford 2011).

**Map 1 Modelled distribution of Brown Treecreeper (south-eastern). Please note this map is currently under revision following initial feedback from key stakeholders.**



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

## Cultural and community significance

Brown Treecreepers (south-eastern) are known to occur on the lands of at least the following Indigenous Peoples: Bandjalang, Bundjalung, Danggan Balun, Darawal, Dharug, Eastern Maar, Gomeroi, Gunaikurnai, Illawarra, Jaadwa, Jadawadjali, Jupagulk, Kabi Kabi, Minjerribah, Ngunnawal, Tharawal, Turrbal, Waka Waka, Warrabinga, Wergaia, Widjabul Wia-bal, Wiradjuri, Wonnarua, Wotjobaluk, Yaegl, Yorta Yorta, Yugara and Yugarapul (Ford et al. 2021). The cultural and community significance of the subspecies is not known. Further research into the subject area may benefit the conservation of the subspecies by providing insights about traditional land management.

## Relevant biology and ecology

Brown Treecreepers (south-eastern) occupy dry open eucalypt forests and woodlands (Ford et al. 2021). The subspecies mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species. They also occur in mallee, forests and woodlands subject to periodic inundation, e.g., River Red Gum (*Eucalyptus camaldulensis*) woodlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses in the upper Murray River (Loyn et al. 2002, 2019). The subspecies is not usually found in woodlands with a dense shrub layer, and it is absent from heavily degraded woodlands and steep rocky hills (Noske 1982).

The subspecies forages both on the ground and in live and dead trees, feeding on a variety of invertebrate prey including ants, beetles, insect larvae, spiders, moths, flies, cockroaches,

termites, and lacewings (Higgins & Peter 2002). Nectar from Mugga Ironbark (*Eucalyptus sideroxylon*) and paperbarks, and sap from unidentified eucalypt species are also eaten, along with lizards and food scraps (Higgins & Peter 2002). Young birds are fed ants, insect larvae, moths, craneflies, spiders and butterfly and moth larvae.

Brown Treecreepers (south-eastern) are usually observed in pairs or small family groups of 8–12 individuals. Terrestrial and arboreal in about equal proportions, they are described as active, noisy and conspicuous while foraging on trunks and branches of trees and amongst fallen timber. *C. p. victoriae* spends much more time foraging on the ground and on fallen logs than other treecreeper species. The subspecies is described as sedentary, with birds occupying permanent territories.

Brown Treecreepers (south-eastern) nest and roost in naturally occurring tree cavities in a variety of eucalypt species (Noske 1982b). Hollows in standing dead or live trees and tree stumps are essential for nesting. Typically, birds breed cooperatively with the breeding group consisting of a breeding pair and a few subordinate males. Nests comprise cups of grass and bark lined with fur and feathers, built in a hollow limb or trunk. Building of the nest is undertaken by all members of the group over a period of 1–2 weeks. Breeding takes place from July to February across its range. Females typically lay 2–3 eggs (Higgins & Peter 2002). Pairs often have two broods during each breeding season. Immature females disperse (Cooper & Walters 2002b) but are reluctant to cross large tracts of open land (Cooper & Walters 2002a; Doerr & Doerr 2007).

Brown Treecreepers (south-eastern) have higher breeding success in territories with lower densities of shrubs, moderate levels of ground cover, greater amounts of foraging substrate and greater invertebrate biomass (Doerr et al. 2006) and substantial volumes of fallen timber (Mac Nally 2006). However, there are subtleties in the suitability of habitat that remain unresolved, judging from the failure of translocated family groups to establish themselves in restored woodland (Bennett et al. 2013).

### **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 Brown Treecreeper (south-eastern) includes areas that have:

- Relatively undisturbed grassy woodland with native understorey;
- large living and dead trees which are essential for roosting and nesting sites and for foraging;

- fallen timber which provides essential foraging habitat and;
- hollows in standing dead or live trees and tree stumps are also essential for nesting.

Any known or likely habitat (Map 1) should be considered as habitat critical to the survival of the subspecies. Additionally, areas that are not currently occupied by the subspecies 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 subspecies.

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

Brown Treecreeper (south-eastern) habitat also occurs in a wide range of land ownership arrangements, including on private land, 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.

Habitat critical to the survival should not be cleared, fragmented or degraded. If removal of habitat critical to the survival cannot be avoided or mitigated, then an offset should be provided. Actions identified in this document may form suitable offsets.

## Threats

Brown Treecreepers suffer primarily from the legacy of over-clearing agricultural lands, with population losses from fragments smaller than 300 ha (DPIE 2017) continuing to occur at least 50 years after fragmentation (Ford 2011), and likely to continue (Szabo et al. 2011) because the ground fauna is lacking abundance and diversity (Watson 2011). The genetic impacts of fragmentation are already apparent (Amos et al. 2014). Other ongoing threats include inappropriate fire regimes, firewood collection and tidying of farmland, increased predation from introduced mammals, invasive weeds and exclusion by Noisy Miners (*Manorina melanocephala*) (Willson & Bignall 2009).

Changes in flood regimes have profound effects on productivity of floodplain woodlands, with floods generally benefitting Brown Treecreepers (south-eastern) except when inundated areas become occupied by Noisy Miners (Loyn et al. 2019). Grazing by stock, rabbits (*Oryctolagus cuniculus*) and kangaroos (*Macropus* spp.) can prevent regeneration but also benefit the species where it depletes the ground cover sufficiently to improve access to the litter layer for foraging (Willson & Bignall 2009).

**Table 1 Threats impacting Brown Treecreeper (south-eastern)**

Threat	Status and severity <sup>a</sup>	Evidence
Habitat loss, degradation and fragmentation		
Habitat loss and fragmentation caused by clearing for agriculture	<ul style="list-style-type: none"> <li>• Status: historical/current/future</li> <li>• Confidence: known</li> <li>• Consequence: moderate</li> <li>• Trend: static</li> <li>• Extent: across part of its range</li> </ul>	The main threats to bird survival in agricultural areas is habitat loss caused by over-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 and small, and often below the critical size needed

		<p>to sustain healthy populations of many bird species (Olsen et al. 2005).</p> <p>Additionally, as habitats become increasingly fragmented due to clearing, native birds become more vulnerable to the other threats, such as predation by feral species and destructive fires, and lose the ability to recolonise previously suitable habitat (Olsen et al. 2005). The ongoing fragmentation and degradation of remnant vegetation can also disrupt essential ecosystem processes such as pollination, seed dispersal and regeneration (Jackson et al. 2016).</p> <p>Habitat loss and fragmentation from agriculture is a significant threat affecting Brown Treecreepers (south-eastern) (Ford 2011; Szabo et al. 2011; Watson 2011), and the genetic impacts of this fragmentation are already apparent (Amos et al. 2014). Retention and replanting of native vegetation in agricultural areas are needed, as is the cessation of land clearing.</p>
Habitat degradation caused by domestic livestock grazing	<ul style="list-style-type: none"> <li>• Status: current</li> <li>• Confidence: known</li> <li>• Consequence: moderate</li> <li>• Trend: increasing</li> <li>• Extent: across part of its range</li> </ul>	<p>Native tree and shrub seedlings and grassy woodland groundcover species are highly susceptible to domestic stock grazing (Willson &amp; Bignall 2009). Many woodland remnants (including travelling stock routes) in poor condition lack native plant diversity and therefore have low habitat value for woodland birds (Seddon et al. 2003; ).</p> <p>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 &amp; Bignall 2009). A reduction or removal of understorey habitat (e.g., native shrubs, herbs and grasses) can reduce foraging and nesting sites, reduce shelter, and consequently increase the risk of predation (Olsen et al. 2005).</p> <p>The other major influence of livestock grazing is its interaction with weed invasion (Martine &amp; Alan 2005). Livestock grazing can exacerbate weed spread through seed dispersal, soil and vegetation disturbance, and nutrient enrichment (Martine &amp; Alan 2005).</p>

Conventional grazing practices	<ul style="list-style-type: none"> <li>• Status: current</li> <li>• Confidence: known</li> <li>• Consequence: moderate</li> <li>• Trend: increasing</li> <li>• Extent: across part of its range</li> </ul>	<p>Conventional grazing practices involves continuous livestock grazing with few rest periods and regular fertilizer application. These practices negatively impact tree regeneration in woodland habitats, e.g., scattered paddock trees as important stepping-stone habitat (Fischer et al. 2009).</p> <p>Fischer et al. (2009) found that fast-rotational grazing was up to 4-fold higher than under conventional grazing, and it did not differ significantly from the probability of regeneration in ungrazed areas. In addition, trees were more likely to regenerate where soil nutrient levels were low. These findings suggest that the tree regeneration crisis can be reversed by applying low-input, fast-rotational grazing. Fertilizer inputs on scattered tree regeneration</p>
Unintentional effects of firewood collection	<ul style="list-style-type: none"> <li>• Status: current</li> <li>• Confidence: known</li> <li>• Consequence: low</li> <li>• Trend: unknown</li> <li>• Extent: across part of its range</li> </ul>	<p>Legal and illegal harvesting of timber for firewood reduces the availability of habitat for birds, and the invertebrates on which they feed, and can alter micro-habitat conditions for native flora (Wilson &amp; Bignall 2009).</p> <p>The level of impact of this threat within Brown Treecreeper's (south-eastern) range is unclear. Management guidelines for firewood collection exist (ANZECC 2001; DEH 2002; DEC 2003) and should be encouraged to maintain and improve essential habitat for the subspecies.</p>
Climate change		
Increased likelihood of extreme events (i.e., wildfire, heatwave, and drought)	<ul style="list-style-type: none"> <li>• Status: current &amp; future</li> <li>• Confidence: known</li> <li>• Consequence: unknown</li> <li>• Trend: increasing</li> <li>• Extent: across the entire range</li> </ul>	<p>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 &amp; CSIRO 2020; IPCC 2021). Heatwaves are also lasting longer, reaching more extreme maximum temperatures, and 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 &amp; CSIRO 2020). Heatwaves also exacerbate drought, which in turn can also increase bushfire risk (Climate Council 2014) and adversely impact resource availability (BOM &amp; CSIRO 2020). Birds are also vulnerable to extreme heatwaves that overwhelm their</p>

		<p>physiological limits (McKechnie et al 2012).</p> <p>It is not fully known how these weather events, or the cumulative effect of these weather events, affect the Brown Treecreeper (south-eastern) survival and reproduction and its habitat. The precautionary principle should be applied to ensure suitable quality and quantity of habitat is conserved across the subspecies' known and suspected range.</p>
Fire		
Inappropriate fire regimes	<ul style="list-style-type: none"> <li>• Status: current &amp; future</li> <li>• Confidence: inferred</li> <li>• Consequence: moderate</li> <li>• Trend: increasing</li> <li>• Extent: across the entire range</li> </ul>	<p>Inappropriate fire regimes are the greatest threat to Australia's birds after direct human destruction and alteration of habitats (Kearney et al. 2020). Too frequent fire may contribute to Brown Treecreeper (south-eastern) decline through: changes in composition and/or structure of vegetation; increased weed invasion following fire; loss of woody debris; reduction in leaf litter; and decline in invertebrate abundance (Spencer &amp; Baxter 2006). Several fires in close succession can also prevent plants and animals from returning to an area (particularly in fragmented landscapes), and may prevent soil seed set (Wilson &amp; Bignall 2009).</p> <p>Fire suppression can be as detrimental as too frequent fires (Wilson &amp; Bignall 2009). Fire plays an important role in environmental ecology, and is needed to trigger natural processes, such as stimulating seed germination (Olsen et al. 2005). Infrequent fire results in wood thickening and loss of savanna, granivorous species, and general biodiversity (Olsen et al. 2005). Fires can also free plants from competition with invasive weeds and eliminate disease or insects that may have been causing damage to old growth. The remnants of burnt trees, with hollowed out logs, can also offer attractive habitats for birds seeking shelter and nesting (Olsen et al. 2005).</p> <p>Since little is known about the appropriate fire regime for the subspecies, particularly in fragmented landscapes, the potential for negative outcomes from management actions is high. A greater level of understanding is required to achieve effective management.</p>

Competition		
Noisy Miner territorial competition	<ul style="list-style-type: none"> <li>• Status: current &amp; future</li> <li>• Confidence: known</li> <li>• Consequence: moderate</li> <li>• Trend: static</li> <li>• Extent: across the entire range</li> </ul>	The Noisy Miner ( <i>Manorina melanocephala</i> ) is a native species that often aggressively excludes other small woodland birds from remnants (Willson & Bignall 2009). Unfortunately, Noisy Miners have benefited from landscape-scale clearing and fragmentation. They typically dominate open Eucalypt woodland remnants on farms, in tree corridors and clumps of paddock trees, especially those lacking a shrubby understorey (Crates et al. 2018). Local scale control programs at a critical breeding sites the subspecies may benefit the subspecies where Noisy Miners are a known threat.
Nest hollow competition	<ul style="list-style-type: none"> <li>• Status: current &amp; future</li> <li>• Confidence: inferred</li> <li>• Consequence: unknown</li> <li>• Trend: unknown</li> <li>• Extent: across part of its range</li> </ul>	A large proportion of Australian bird species use tree hollows as nesting sites (Newton 1994), and almost all arboreal marsupials use tree hollows (e.g., for breeding sites or shelter; Lindenmayer et al. 1991). As a result, inter-specific competition may be a common occurrence. It is crucial to implement actions to prevent the further loss of hollow-bearing trees in order to minimise the long-term risk of extinction of hollow-dependent species (Manning et al. 2013; Le Roux et al. 2014), including Brown Treecreepers (south-eastern).
Invasive species (including threats from grazing, trampling, predation)		
Cat and fox predation	<ul style="list-style-type: none"> <li>• Status: current &amp; future</li> <li>• Confidence: suspected</li> <li>• Consequence: low</li> <li>• Trend: static</li> <li>• Extent: across the entire range</li> </ul>	Woodland bird species, including Brown Treecreepers (south-eastern), that nest or forage on the ground are particularly vulnerable to predation by cats ( <i>Felis catus</i> ) and foxes ( <i>Vulpes vulpes</i> ) (Olsen et al. 2005; Commonwealth of Australia 2008a, 2008b, 2015a, 2015b; Woinarski et al. 2017). The threat of cats is amplified by bushfires as they take advantage of recently burnt areas (McGregor et al. 2016), to hunt more efficiently (McGregor et al. 2015).
Rabbit and overabundant kangaroo grazing pressure	<ul style="list-style-type: none"> <li>• Status: historical/current/future</li> <li>• Confidence: suspected</li> <li>• Consequence: low</li> <li>• Trend: static</li> <li>• Extent: across the entire range</li> </ul>	There is evidence that European rabbits ( <i>Oryctolagus cuniculus</i> ) impact negatively on native species via competition for resources, alteration of the structure and composition of vegetation, land degradation, and supporting elevated densities of introduced predators (cats, foxes)

		<p>(Commonwealth of Australia 2016a, 2016b).</p> <p>Overabundant kangaroos (<i>Macropus</i> spp.) grazing pressure can also negatively affect the subspecies by preventing regeneration (Willson &amp; Bignall 2009).</p> <p>Grazing pressure by rabbits and overabundant kangaroos has reduced the capacity of woodlands to regenerate, consequently reducing Brown Treecreeper (south-eastern) nesting, feeding and foraging sites.</p>
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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 subspecies. 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
<b>Almost certain</b>	Low risk	Moderate risk	Very high risk	Very high risk	Very high risk
<b>Likely</b>	Low risk	Moderate risk	High risk	Very high risk	Very high risk
<b>Possible</b>	Low risk	Moderate risk	High risk	Very high risk	Very high risk
<b>Unlikely</b>	Low risk	Low risk	Moderate risk	High risk	Very high risk
<b>Unknown</b>	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 Brown Treecreeper (south-eastern) risk matrix**

Likelihood	Consequences				
	Not significant	Minor	Moderate	Major	Catastrophic
Almost certain				<ul style="list-style-type: none"> <li>Habitat loss and fragmentation caused by clearing for agriculture</li> </ul>	
Likely		<ul style="list-style-type: none"> <li>Unintentional effects of firewood collection</li> <li>Nest hollow competition</li> <li>Rabbit and overabundant kangaroo grazing</li> </ul>	<ul style="list-style-type: none"> <li>Altered fire regimes</li> <li>Increased likelihood of extreme events (i.e., wildfire, heatwave, and drought)</li> <li>Conventional grazing practices</li> </ul>	<ul style="list-style-type: none"> <li>Habitat degradation caused by domestic livestock grazing</li> <li>Noisy Miner territorial competition</li> </ul>	
Possible		<ul style="list-style-type: none"> <li>Cat and fox predation</li> </ul>			
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 or increasing populations observed across the range.

### Conservation and management priorities

#### Habitat loss and fragmentation caused by clearing for agriculture

- Cease all land clearing of habitat critical of the survival of Brown Treecreeper (south-eastern).
- 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:
  - Replace cohorts of trees where they have been removed from the landscape, particularly in areas adjacent to and connecting woodland remnants.
  - Establish new habitat patches in areas where native vegetation cover is lacking.
  - Target the productive lower parts of the landscape, especially areas adjacent to streams, 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.
- Ensure populations remain connected. Avoid gaps greater than 100 m between habitat patches and along linear remnants. Eliminate gaps through revegetation, either corridors or stepping stone plantings, focusing on important movement pathways.
- Fence off known habitat to protect natural features and to allow natural regeneration.
- Promote appropriate management of flow regimes in floodplains including initiatives to deliver water to icon sites on the Murray River, some of which may benefit this subspecies.

#### **Habitat degradation caused by domestic livestock grazing**

- Prevent intensive grazing in high value woodland habitats.
- Modify grazing management practices that will maintain or improve habitat values and still allow some grazing to occur at strategic times of the year.
- Protect and manage travelling stock routes to prevent further loss of habitat (i.e. prevent set-stocking and allocating resources so they are appropriately managed).

#### **Conventional grazing practices**

- Apply low-input, fast rotational grazing, characterized by prolonged rest periods in between short, intensive grazing events to promote regeneration.

#### **Noisy Miner territorial competition**

- Measure the abundance and impact of Noisy Miners on subspecies populations and habitat, and implement appropriate management actions with demonstrated effectiveness to reduce the impacts of Noisy Miners if/where required. The preferred method for managing Noisy Minor impacts is through habitat modification (e.g. reduce the amount of edge and establish a structurally complex understorey).

#### **Altered fire regimes**

- Develop site-based fire management strategies with local authorities which consider the ecological needs of the subspecies.
- Monitor bushfire-affected areas to assess the impact of wildfire on the subspecies and its habitats, and the capacity of the subspecies to recover from such events.
- Actively manage the landscape to minimise the risk of very large, high-intensity wildfires.

#### **Increased likelihood of extreme events (i.e., wildfire, heatwave, and drought)**

- Use climate modelling techniques to investigate the potential impact of climate change on the subspecies and its habitat critical for survival.

#### **Stakeholder engagement/community engagement**

- Raise awareness among landholders in areas known to have important habitat for the subspecies, to engage them in proactive management and monitoring of the subspecies' population on their land.
- Raise public awareness of the damage caused to wildlife habitat by slashing, under-scrubbing, over-grazing, and frequent fuel reduction burns.

- Target in-perpetuity covenants or stewardship agreements to landholders with high quality remnant woodland habitat.
- Support community education programs to achieve regional conservation outcomes.
- Raise public awareness of the importance of large old trees (particularly isolated paddock trees and hollow-bearing trees, live and dead) and undertake restoration and revegetation activities to replace cohorts of trees where they have been removed from the landscape, particularly in areas adjacent to and connecting woodland remnants.
- Encourage the retention of woody ground debris:
  - Raise public awareness of the damage caused to native wildlife habitat by firewood collection, cleaning up, over-grazing, and frequent fuel reduction burns.
  - Promote the retention of large old trees that have the potential to contribute woody ground debris via the shedding of limbs.
- Encourage responsible pet ownership, e.g., keeping cats indoors or contained within secure outdoor areas.

### **Survey and monitoring priorities**

- Monitor long term trends and status of the subspecies.
- Monitor the effectiveness of management actions and trends in local populations regularly. Any site-based management should be adapted, added or removed over time in response to monitoring results.

### **Information and research priorities**

- Determine population densities and trends in all parts of the range.
- Continue research into the ecology and conservation requirements of the subspecies, including the identification of key habitats and potential habitats.
- Identify fire regimes appropriate to the species' habitat requirements.
- Determine habitat conditions needed for successful reintroduction.
- Identify different practical methods for restoring the structure and function of the ground layer in degraded habitat, including soil biota and its functionality.
- Investigate appropriate management interventions for isolated subpopulations, including translocation of birds between fragments.
- Assess the sustainable levels of firewood collection from areas of habitat occupied by the subspecies.
- Assess effects of water management on populations of this and other species in floodplain woodlands, including competitors such as Noisy Miners.
- Determine the current consequences of isolated subpopulation and habitat fragmentation on the subspecies.
- Continue to assess the impact of Noisy Miners on subspecies' populations and habitat, and determine appropriate management actions with demonstrated effectiveness to reduce the impacts of Noisy Miners if/where required.

- Determine where hollows are limiting and develop strategies to increase hollow availability that have clear objectives and include monitoring, maintenance, and reporting requirements. Possible actions include:
  - nest box installation,
  - the humane control of introduced species, and
  - the protection of trees having the potential to develop hollows.

### Recovery plan decision

A decision about whether there should be a recovery plan for this species has not yet been determined. The purpose of this consultation document is to elicit additional information to help inform this decision.

### Links to relevant implementation documents

- [Threat abatement plan for predation by European red fox](#) (Commonwealth of Australia 2008b).
- [Threat abatement plan for predation by feral cats](#) (Commonwealth of Australia 2015b).
- [Threat abatement plan for competition and land degradation by rabbits](#) (Commonwealth of Australia 2016b).
- [Listing assessment for aggressive exclusion of birds from potential woodland and forest habitat by over-abundant noisy miners \(\*Manorina melanocephala\*\)](#) (Commonwealth of Australia 2014).
- [Removal of dead wood as a key threatening process](#) (NSW National Parks and Wildlife Service 2003).

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# THREATENED SPECIES SCIENTIFIC COMMITTEE

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

The Threatened Species Scientific Committee draft listing assessment

## Attachment A: Listing Assessment for *Climacteris picumnus victoricae*

### Reason for assessment

This assessment follows 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	68,000	36,000	113,000	<p>The population estimate of Brown Treecreepers (south-eastern) is the product of the three measures of AOO and the density recorded in 2 ha 20 min surveys (<math>2.34/2 \text{ ha} \pm \text{SD } 1.93</math>; BirdLife Australia cited in Ford et al. 2021).</p> <p>Studies by Ford and others have shown that Brown Treecreepers (south-eastern) tend to persist only in substantial areas of remnant habitat, so it is assumed that, if they are present at all, there must have been at least 20 ha of suitable habitat within the patch where they were observed (S Garnett pers. comm. 9 Nov 2021). Therefore, each 2x2 km square contributing to the AOO is assumed to indicate 20 ha of suitable habitat (S Garnett pers. comm. 9 Nov 2021).</p> <p>The reliability of this population estimate is low (S Garnett pers. comm. 9 Nov 2021).</p>
Trend	Declining			There is evidence of sustained population declines (Ford et al. 2021). The reliability of this estimate is medium (Ford et al. 2021).
Generation time (years)	4.9	4.7	5.1	Bird et al. (2020). The reliability of this estimate is high.

<b>Metric</b>	<b>Estimate used in the assessment</b>	<b>Minimum plausible value</b>	<b>Maximum plausible value</b>	<b>Justification</b>
<b>Extent of occurrence</b>	1,100,000 km <sup>2</sup>	1,000,000 km <sup>2</sup>	1,200,000 km <sup>2</sup>	Ford et al. (2021). The reliability of this estimate is high (Ford et al. 2021).
<b>Trend</b>	Stable			Ford et al. (2021). The reliability of this estimate is medium (Ford et al. 2021).
<b>Area of Occupancy</b>	30,000 km <sup>2</sup>	24,000 km <sup>2</sup>	50,000 km <sup>2</sup>	The minimum AOO is the number of 2x2 km squares that includes all records, but it is assumed to be at least 20% higher than the calculated amount and possibly twice that (Ford et al. 2021; S Garnett pers. comm. 9 Nov 2021).  The reliability of this estimate is low (Hodder et al. 2021; S Garnett pers. comm. 9 Nov 2021).
<b>Trend</b>	Contracting			Ford et al. (2021). The reliability of this estimate is medium (Ford et al. 2021).
<b>Number of subpopulations</b>	100			Due to fragmentation of woodland habitat and low dispersal distances there are likely to be many subpopulations of Brown Treecreeper (south-eastern). For the purpose of this assessment there are estimated to be 100 subpopulations. However, the reliability of this estimate is low (Ford et al. 2021).
<b>Trend</b>	Declining			Ford et al. (2021). The reliability of this estimate is high (Ford et al. 2021).
<b>Basis of assessment of subpopulation number</b>	Fragmented populations appear to be genetically isolated because birds fail to disperse across vegetation gaps, and there are many fragments (Ford et al. 2021).			
<b>No. locations</b>	>10			Ford et al. (2021).
<b>Trend</b>	Not calculated			Ford et al. (2021).
<b>Basis of assessment of location number</b>	The spatial nature of the threats is such that there are >10 geographically or ecologically distinct areas where a single threatening event could affect all individuals of the subspecies present within a period of one generation (Ford et al. 2021).			
<b>Fragmentation</b>	Fragmented but many large subpopulations (Ford et al. 2021).			
<b>Fluctuations</b>	Not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals – no parameter was changed by an order of magnitude by the 2019/20 fire (Ford 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%
<p><b>A1</b> Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p><b>A2</b> 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.</p> <p><b>A3</b> Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(a) <i>cannot be used for A3</i>]</p> <p><b>A4</b> 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.</p> <p>Based on any of the following</p> <ul style="list-style-type: none"> <li>(a) direct observation [except A3]</li> <li>(b) an index of abundance appropriate to the taxon</li> <li>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</li> <li>(d) actual or potential levels of exploitation</li> <li>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</li> </ul>			

## Criterion 1 evidence

### Eligible under Criterion 1 A2bce+3ce+4bce for listing as Vulnerable

Brown Treecreepers (south-eastern) occur in south-eastern Australia from the Grampians in western Victoria, through central New South Wales to the Bunya Mountains in Queensland (Schodde & Mason 1999), from the coast to the inland slopes of Great Dividing Range (Ford et al. 2021). The subspecies has long been recognised as a declining member of the woodland avifauna (Ford et al. 2021).

It appears likely that the Brown Treecreeper (south-eastern) population has undergone a significant reduction in size (30–50%) in the last three generations (15 years) based on reporting rate data (Ford et al. 2021). 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 between the 1977–1981 and 1998–2002 BirdLife Australia Atlases were variable among regions (Barrett et al. 2002), and there were a variety of trends reported up until 2010 but most of them negative (Ford et al. 2009; Garnett et al. 2011; Szabo et al. 2011; Saunders 2018). At a local level, the reporting rate in the Australian Capital Territory declined by 83% from 1987–2017 with a 70% decline in the final 15 years (Canberra Ornithologists Group 2020). In southern New South Wales, the subspecies declined by 42% from 2002–2015 (Lindenmayer et al. 2018) and in north-east New South Wales reporting rates at 41 sites were 70% in 1977–1980 and 83% in 2004–2006 (Gosper & Gosper 2016) but only 24% in 2020 (DG and CR Gosper pers. comm. cited in Ford et al. 2021). Across the range from 2003–2018, reporting rates from 2 ha 20 min counts

and 500 m area searches declined by 36% and 29% respectively (Birddata cited in Ford et al. 2021).

Decline of Brown Treecreepers (south-eastern) is partially attributed to such ongoing threats as: increased predation from introduced mammals, invasive weeds, and exclusion by Noisy Miners (*Manorina melanocephala*) (Willson & Bignall 2009). Most of these threats are greater at habitat edges and so are exacerbated by fragmentation. Grazing by stock, rabbits (*Oryctolagus cuniculus*) and overabundant kangaroos (*Macropus* spp.) can also negatively affect the subspecies by preventing regeneration. The effect of these threats, combined with habitat loss and fragmentation for large-scale agriculture, inappropriate fire regimes, residential and commercial development, and inappropriate firewood collection and tidying of farmland, have not ceased and may not be reversible.

The data presented above appear to demonstrate that the subspecies is **eligible for listing as Vulnerable** under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

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

	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
<b>B1.</b> Extent of occurrence (EOO)	< 100 km <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
<b>B2.</b> Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
<b>AND at least 2 of the following 3 conditions:</b>			
(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

Brown Treecreepers (south-eastern) EOO is estimated to be 1,100,000 km<sup>2</sup> (range 1,000,00–1,200,000 km<sup>2</sup>) and AOO is estimated to be 30,000 km<sup>2</sup> (range 24,000–50,000 km<sup>2</sup>) (Ford et al. 2021). The population is fragmented but there are many large subpopulations spread across more than 10 geographically or ecologically distinct areas. The EOO for the subspecies is stable though the AOO has a contracting trend (Ford et al. 2021). There are estimated to be 68,000

(range 36,000–113,000) mature individuals in the wild (S Garnett pers. comm. 9 Nov 2021) and 100 subpopulations (Ford et al. 2021), both of these estimates have declining trends (Ford et al. 2021). The subspecies is not subject to extreme fluctuations in EOO, AOO, number of subpopulations, locations or mature individuals (Ford et al. 2021).

The data presented above appear to demonstrate the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

### Criterion 3 Population size and decline

	<b>Critically Endangered Very low</b>	<b>Endangered Low</b>	<b>Vulnerable Limited</b>
Estimated number of mature individuals	< 250	< 2,500	< 10,000
AND either (C1) or (C2) is true			
<b>C1.</b> An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future)	<b>Very high rate 25% in 3 years or 1 generation (whichever is longer)</b>	<b>High rate 20% in 5 years or 2 generation (whichever is longer)</b>	<b>Substantial rate 10% in 10 years or 3 generations (whichever is longer)</b>
<b>C2.</b> 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

The total number of mature individuals is estimated to be 68,000 (range 36,000–113,000) (S Garnett pers. comm. 9 Nov 2021). There are estimated to be 100 subpopulations with a declining trend (Ford et al. 2021). The subspecies' distribution is not precarious for its survival. The subspecies is not subject to extreme fluctuations in the number of mature individuals (Ford et al. 2021).

The data presented above appear to demonstrate the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

#### Criterion 4 Number of mature individuals

	Critically Endangered Extremely low	Endangered Very Low	Vulnerable Low
<b>D. Number of mature individuals</b>	< 50	< 250	< 1,000
<b>D2.<sup>1</sup> Only applies to the Vulnerable category</b> 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 <sup>2</sup> or number of locations ≤ 5

<sup>1</sup> 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

The total number of mature individuals is 68,000 (range 36,000–113,000) (S Garnett pers. comm. 9 Nov 2021) with a declining trend (medium reliability) (Ford et al. 2021). The AOO is estimated to be 30,000 km<sup>2</sup> (range 24,000–50,000 km<sup>2</sup>; low reliability) with a contracting trend (medium reliability), and is not considered to be small or restricted (Ford et al. 2021).

The data presented above appear to demonstrate that the subspecies is not eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

## Criterion 5 Quantitative analysis

	<b>Critically Endangered Immediate future</b>	<b>Endangered Near future</b>	<b>Vulnerable Medium-term future</b>
<b>Indicating the probability of extinction in the wild to be:</b>	≥ 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 appears not to have been undertaken, and therefore there is insufficient data to demonstrate if the subspecies is eligible for listing under this criterion. However, the purpose of this consultation document is to elicit additional information to better understand the subspecies' status. This conclusion should therefore be considered to be tentative at this stage, as it may be changed as a result of responses to this consultation process.

### Adequacy of survey

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

## **CONSULTATION QUESTIONS FOR *Climacteris picumnus victoriae* (Brown Treecreeper (south-eastern))**

### **SECTION A - GENERAL**

1. Is the information used to assess the nationally threatened status of the species/subspecies robust? Have all the underlying assumptions been made explicit? Please provide justification for your response.
2. Can you provide additional data or information relevant to this assessment?
3. Have you been involved in previous state, territory or national assessments of this species/subspecies? If so, in what capacity?

## **PART 1 – INFORMATION TO ASSIST LISTING ASSESSMENT**

### **SECTION B DO YOU HAVE ADDITIONAL INFORMATION ON THE ECOLOGY OR BIOLOGY OF THE SPECIES/SUBSPECIES? (If no, skip to section C)**

#### **Biological information**

4. Can you provide any additional or alternative references, information or estimates on longevity, average life span and generation length?
5. Do you have any additional information on the ecology or biology of the species/subspecies not in the current advice?

### **SECTION C ARE YOU AWARE OF THE STATUS OF THE TOTAL NATIONAL POPULATION OF THE SPECIES/SUBSPECIES? (If no, skip to section D)**

#### **Population size**

6. Has the survey effort for this taxon been adequate to determine its national adult population size? If not, please provide justification for your response.
7. Do you consider the way the population size has been derived to be appropriate? Are there any assumptions and unquantified biases in the estimates? Did the estimates measure relative or absolute abundance? Do you accept the estimate of the total population size of the species/subspecies? If not, please provide justification for your response.
8. If not, can you provide a further estimate of the current population size of mature adults of the species/subspecies (national extent)? Please provide supporting justification or other information.

If, because of uncertainty, you are unable to provide a single number, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of possible species/subspecies numbers, and also choose the level of confidence you have in this estimate:

Number of mature individuals is estimated to be in the range of:

☐ <100,000 ☐ 100,001–200,000 ☐ 201,000–300,000 ☐ 300,001–400,000

☐ 400,001–500,000 ☐ 500,001–600,000 ☐ >600,000

Level of your confidence in this estimate:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much information to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, information suggests this range
- ☐ 95–100% - high level of certainty, information indicates quantity within this range
- ☐ 99–100% - very high level of certainty, data are accurate within this range

**SECTION D ARE YOU AWARE OF TRENDS IN THE OVERALL POPULATION OF THE SPECIES/SUBSPECIES? (If no, skip to section E)**

9. Does the current and predicted rate of decline used in the assessment seem reasonable? Do you consider that the way this estimate has been derived is appropriate? If not, please provide justification of your response.

**Evidence of total population size change**

10. Are you able to provide an estimate of the total population size during the late 2000s (*at or soon after the start of the most recent three generation period*)? Please provide justification for your response.

If, because of uncertainty, you are unable to provide a single number, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of possible species/subspecies numbers, and also choose the level of confidence you have in this estimate.

Number of mature individuals is estimated to be in the range of:

☐ <100,000 ☐ 100,001–200,000 ☐ 201,000–300,000 ☐ 300,001–400,000

☐ 400,001–500,000 ☐ 500,001–600,000 ☐ >600,000

Level of your confidence in this estimate:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much information to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, information suggests this range
- ☐ 95–100% - high level of certainty, information indicates quantity within this range
- ☐ 99–100% - very high level of certainty, data are accurate within this range

11. Are you able to comment on the extent of decline in the species/subspecies' total population size over the last approximately 13 years (i.e., three generations)? Please provide justification for your response.

If, because of uncertainty, you are unable to provide an estimate of decline, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of decline, and also choose the level of confidence you have in this estimated range.

Decline estimated to be in the range of:

☐ 1–30% ☐ 31–50% ☐ 51–80% ☐ 81–100% ☐ 90–100%

Level of your confidence in this estimated decline:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much information to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, suggests this range of decline
- ☐ 95–100% - high level of certainty, information indicates a decline within this range
- ☐ 99–100% - very high level of certainty, data are accurate within this range

12. Please provide (if known) any additional evidence which shows the population is stable, increasing or declining.

**SECTION E ARE YOU AWARE OF INFORMATION ON THE TOTAL RANGE OF THE SPECIES/SUBSPECIES? (If no, skip to section F)**

**Current Distribution/range/extent of occurrence, area of occupancy**

13. Does the assessment consider the entire geographic extent and national extent of the species/subspecies? If not, please provide justification for your response.
14. Has the survey effort for this species/subspecies been adequate to determine its national distribution? If not, please provide justification for your response.
15. Is the distribution described in the assessment accurate? If not, please provide justification for your response and provide alternate information.
16. Do you agree that the way the current extent of occurrence and/or area of occupancy have been estimated is appropriate? Please provide justification for your response.
17. Can you provide estimates (or if you disagree with the estimates provided, alternative estimates) of the extent of occurrence and/or area of occupancy.

If, because of uncertainty, you are unable to provide an estimate of extent of occurrence, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of extent of occurrence, and also choose the level of confidence you have in this estimated range.

**Current extent of occurrence** is estimated to be in the range of:

- ☐ <1,000,000 km<sup>2</sup> ☐ 1,000,000–1,500,000 km<sup>2</sup> ☐ 1,500,001–2,000,000 km<sup>2</sup>
- ☐ >2,000,000 km<sup>2</sup>

Level of your confidence in this estimated extent of occurrence

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, data suggests this range of decline
- ☐ 95–100% - high level of certainty, data indicates a decline within this range
- ☐ 99–100% - very high level of certainty, data is accurate within this range

If, because of uncertainty, you are unable to provide an estimate of area of occupancy, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of area of occupancy, and also choose the level of confidence you have in this estimated range.

**Current area of occupancy** is estimated to be in the range of:

- ☐ <20,000 km<sup>2</sup> ☐ 20,000–40,000 km<sup>2</sup> ☐ 40,001–60,000 km<sup>2</sup>
- ☐ 60,000–80,000 km<sup>2</sup> ☐ 80,001–100,000 km<sup>2</sup> ☐ >100,000 km<sup>2</sup>

Level of your confidence in this estimated extent of occurrence:

- ☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on
- ☐ 31–50% - more than a guess, some level of supporting evidence
- ☐ 51–95% - reasonably certain, data suggests this range of decline
- ☐ 95–100% - high level of certainty, data indicates a decline within this range
- ☐ 99–100% - very high level of certainty, data is accurate within this range

**SECTION F ARE YOU AWARE OF TRENDS IN THE TOTAL RANGE OF THE SPECIES/SUBSPECIES? (If no, skip to section G)**

**Past Distribution/range/extent of occurrence, area of occupancy**

18. Do you consider that the way the historic distribution has been estimated is appropriate? Please provide justification for your response.
19. Can you provide estimates (or if you disagree with the estimates provided, alternative estimates) of the former extent of occurrence and/or area of occupancy.

If, because of uncertainty, you are unable to provide an estimate of past extent of occurrence, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of past extent of occurrence, and also choose the level of confidence you have in this estimated range.

**Past extent of occurrence** is estimated to be in the range of:

- ☐ <1,000,000 km<sup>2</sup> ☐ 1,000,000–1,500,000 km<sup>2</sup> ☐ 1,500,001–2,000,000 km<sup>2</sup>

☐ >2,000,000 km<sup>2</sup>

Level of your confidence in this estimated extent of occurrence

☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on

☐ 31–50% - more than a guess, some level of supporting evidence

☐ 51–95% - reasonably certain, data suggests this range of decline

☐ 95–100% - high level of certainty, data indicates a decline within this range

☐ 99–100% - very high level of certainty, data is accurate within this range

If, because of uncertainty, you are unable to provide an estimate of past area of occupancy, you may wish to provide an estimated range. If so, please choose one of the ranges suggested in the table below of ranges of past area of occupancy, and also choose the level of confidence you have in this estimated range:

**Past area of occupancy** is estimated to be in the range of:

☐ <20,000 km<sup>2</sup> ☐ 20,000–40,000 km<sup>2</sup> ☐ 40,001–60,000 km<sup>2</sup>

☐ 60,000–80,000 km<sup>2</sup> ☐ 80,001–100,000 km<sup>2</sup> ☐ >100,000 km<sup>2</sup>

Level of your confidence in this estimated extent of occurrence:

☐ 0–30% - low level of certainty/ a bit of a guess/ not much data to go on

☐ 31–50% - more than a guess, some level of supporting evidence

☐ 51–95% - reasonably certain, data suggests this range of decline

☐ 95–100% -high level of certainty, data indicates a decline within this range

☐ 99–100% - very high level of certainty, data is accurate within this range

## **PART 2 – INFORMATION FOR CONSERVATION ADVICE ON THREATS AND CONSERVATION ACTIONS**

### **SECTION G DO YOU HAVE INFORMATION ON THREATS TO THE SURVIVAL OF THE SPECIES/SUBSPECIES? (If no, skip to section H)**

20. Do you consider that all major threats have been identified and described adequately?

21. To what degree are the identified threats likely to impact on the species/subspecies in the future?

22. Are the threats impacting on different populations equally, or do the threats vary across different populations?

23. Can you provide additional or alternative information on past, current or potential threats that may adversely affect the species/subspecies at any stage of its life cycle?
24. Can you provide supporting data/justification or other information for your responses to these questions about threats?

**SECTION H**     **DO YOU HAVE INFORMATION ON CURRENT OR FUTURE MANAGEMENT FOR THE RECOVERY OF THE SPECIES/SUBSPECIES?**  
**(If no, skip to section I)**

25. What planning, management and recovery actions are currently in place supporting protection and recovery of the species/subspecies? To what extent have they been effective?
26. Can you recommend any additional or alternative specific threat abatement or conservation actions that would aid the protection and recovery of the species/subspecies?
27. Would you recommend translocation (outside of the species' historic range) as a viable option as a conservation actions for this species/subspecies?

**SECTION I**     **DO YOU HAVE INFORMATION ON STAKEHOLDERS IN THE RECOVERY OF THE SPECIES/SUBSPECIES?**

28. Are you aware of other knowledge (e.g., traditional ecological knowledge) or individuals/groups with knowledge that may help better understand population trends/fluctuations, or critical areas of habitat?
29. Are you aware of any cultural or social importance or use that the species/subspecies has?
30. What individuals or organisations are currently, or potentially could be, involved in management and recovery of the species/subspecies?
31. How aware of this species/subspecies are land managers where the species/subspecies is found?
32. What level of awareness is there with individuals or organisations around the issues affecting the species/subspecies?
  - a. Where there is awareness, what are these interests of these individuals/organisations?
  - b. Are there populations or areas of habitat that are particularly important to the community?

**PART 3 – ANY OTHER INFORMATION**

33. Do you have comments on any other matters relevant to the assessment of this species/subspecies?