Threatened Species Assessment

Pyrrholaemus sagittatus
Speckled Warbler

Taxonomy

Pyrrholaemus sagittatus (del Hoyo and Collar 2016)

This was previously known as *Chthonicola sagittatus* (Latham, 1801)

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* as *Chthonicola sagittata* (SAC 2000).

Categorised as Vulnerable in the 2013 Advisory list of threatened vertebrate fauna in Victoria (DSE 2013).

Proposed conservation status

Endangered in Victoria

Criterion C2a(i)

Species Information

Description and Life History

Speckled Warblers are small (115-125 mm) cream-coloured birds streaked boldly with black. A gregarious taxon, they occur singly, in pairs and sometimes small parties (Victorian Biodiversity Atlas (VBA) data), often in the company of thornbills, particularly Buff-rumped Thornbills (Higgins and Peter 2002, p. 281). Speckled Warblers are considered sedentary and habitat specialists. Home ranges vary from 6-12 hectares. The birds hop over bare (and often rocky) ground, logs, tree trunks, dry litter and grass tussocks while foraging (Emison et al. 1987, Pizzey and Knight 1997) and are often secretive and shy (M. O'Brien pers. obs. 2016). Birds breed in large, exclusive territories in pairs or as trios, which comprise one female with two males (but not cooperatively) (Higgins and Peter 2002, p. 281). A full description of the taxon can be found in Higgins and Peter (2002).

Generation Length

The generation length of Speckled Warblers is inferred to be 4 to 9 years. This is based on the generation length for related species (in this case, the Chestnut-rumped Heathwren) and an average figure of 5.5 years given in BirdLife International (2016). Banding study data (interstate) indicate that some individuals have been re-trapped regularly up to 10 years (Higgins and Peter 2002, 281), but the taxon is generally considered short-lived (Vict. NE RFA 1998).

Distribution

Speckled Warblers are endemic birds of coastal eastern Australia excluding Tasmania (Higgins and Peter 2002). The taxon mainly inhabits the 600-800mm annual rainfall belt of the northern foothills of the Great Divide. It is rare in Gippsland where it has been reported from Buchan and Suggan Buggan areas (J. Hutchison/BirdLife East Gippsland pers. comm. 2018). The current 'main range' in Victoria is the Central District (mainly box-ironbark), where it exists as scattered but widespread populations (Higgins and Peter op. cit.). Many recent records are from the Chiltern-Mt Pilot region in NE Victoria, probably due to greater birdwatching observations being made in this area (M. O'Brien pers. comm. November 2018).

Habitat

Speckled Warblers are habitat specialists in terms of their foraging and nesting behaviour. They are sedentary, living in pairs or trios and nesting on the ground in grass tussocks, dense litter or fallen branches.

The birds have been recorded from Box-Ironbark and Broad-leaved Peppermint forests, dry woodlands and wooded farmlands (particularly those containing Yellow Box), where there is a scattered shrub cover of acacias or low eucalypt regrowth (Emison et al. 1987). They are seldom seen far from dense shrubs, which provide refuge and cover for nests, but inhabit open eucalypt forest and woodlands. They are rarely reported from the coast in drier habitats and are usually associated with rocky ridges or gullies (Higgins and Peter 2002).

The preferred foraging habitat of Speckled Warbler is areas with a combination of open grassy patches, leaf litter and shrub cover.

Threats

Speckled Warblers are habitat specialists in terms of their foraging and nesting behaviour, characteristics that are likely to result in a small population size in fragmented landscapes. This makes it prone to extinction (Gardner 2002).

Litter is an important foraging component of warblers, so disturbance and loss of litter is likely to adversely affect the taxon (Vict. NE RFA 1998). Removal of timber and other impacts which lead to a simplification of the understorey and loss of ground litter threaten the condition of the habitat. The key threats acting on the taxon include habitat clearance, habitat disturbance and associated impacts on population size and viability.

Higgins and Peter (2002) noted that 'much habitat has been cleared (in Australia), and what remains continues to be cleared, with small fragments gradually losing remnant subpopulations'. Loss of nest sites as a result of fuel management activities and bushfires may be an important threat.

Garnett and Crowley (2000) referred to the following threats: habitat clearing; progressive loss of sub-populations in small remnants of habitat; small population size leading to local extirpation; poor dispersal capacity; nest predation; poor reproductive success; browsing by animals (native and introduced, including stock); and loss of ground cover.

IUCN Criteria

Criterion A. Population size reduction.
Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered	Endangered	Vulnerable
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.

A2 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.

A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(*a*) *cannot be used for A3*]

A4 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.

based on any of the following:

(a) direct observation [*except A3*]

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

Evidence:

Eligible under Criterion A2 as Vulnerable

The population reduction over the past 12 to 27 years is inferred to be 15 to 35%, based on (b) and (c) above.

Documented declines elsewhere in Australia are expected to be similar in Victoria, if not more so (M. O'Brien pers. comm. March 2019). Higgins & Peter 2002, p. 281, and Victoria North East Regional Forest Agreement 1998, Appendix G, p. 236 noted that the taxon 'has declined over most of range'. Garnett and Crowley (2000) noted 'Clearance continues, with smaller fragments gradually losing remnant sub-populations, sometimes more than 30 years after they have been isolated.' and 'There has been a decline of 40% in the last decade in places where no habitat fragments larger than 100 ha have been left.' Tzaros (2005) noted that the decline of the species in the Box-Ironbark habitats across central Victoria has occurred most noticeably since around 1980.

Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
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			

Evidence:

Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 124,078 km² and the Area of Occupancy (AoO) is estimated to be 2,832 km², both of which exceed the thresholds for criterion B.

Criterion C. Small Population size and decline		Critically Endangered	Endangered	Vulnerable
Number of mature individuals		< 250	< 2,500	< 10,000
AND at least one of C1 or C2				
C1	An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2	An observed, estimated, projected or inferred continuing decline AND least 1 of the following 3 conditions:			
(a)	(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
	(ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals				

Evidence:

Eligible under Criterion C2 as Endangered

It is estimated that there are 800 to 1,000 mature individuals. The Speckled Warbler population is possibly up to 1,000 adult birds and interpolated from the AoO figure using a maximum density of 0.4 birds/ha (Chambers 2008,

M. O'Brien pers. comm. November 2018). Victoria is the southern edge of the taxon's range and it is largely restricted to the box-ironbark region, with only tiny, isolated populations outside this area.

The number of mature individuals is projected to continue to decline, and the number of mature individuals in each subpopulation is fewer than 250.

Speckled Warblers have declined across a large part of their range, and in districts where no habitat fragments larger than 100 ha remain, they appear to be locally extinct. In addition to area, habitat quality is likely to affect distribution in remnants, since the presence of the taxon appears to be associated with a high degree of habitat complexity (e.g. coarse woody debris).

The taxon appears to become locally extinct in regions where habitat fragments are less than 100 ha in size (Traill and Duncan 2000) thus larger habitat fragments are probably required to maintain viable populations. The decline across the taxon's range in Australia is likely to continue unless the factors contributing to this are determined and addressed and suitably sized habitats are managed as conservation reserves (M. O'Brien pers. comm. Nov. 2018).

Criterion D. Very small or restricted population			
	Critically Endangered	Endangered	Vulnerable
Number of mature individuals (observed or estimated)	< 50	< 250	< 1,000
D2 Only applies to the VU 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: AoO < 20 km2 or number of locations ≤ 5

Evidence:

Eligible under Criterion D as Vulnerable

It is estimated that there are 800 to 1,000 mature individuals.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

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