Threatened Species Assessment

Acanthiza iredalei hedleyi
Slender-billed Thornbill (Lowan Mallee)

Taxonomy

Acanthiza iredalei hedleyi Mathews, 1912

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2002).

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

Proposed conservation status

Endangered in Victoria

Criterion B2ab(i,ii,iii)

Species Information

Description and Life History

Slender-billed Thornbills are very small (80-95mm) shy, grey and brown 'bush-birds' that feed from the ground or low shrubs. They feed on small insects and occasionally spiders (Blakers et al. 1984) and usually lay 2-3 eggs in a domed nest in low bushes (Garnett and Crowley 2000). The taxon is endemic to southern Australia (Higgins and Peter 2002) and the Victorian population *(hedleyi)* is the most easterly component of the taxon. A detailed description of the taxon can be found in Pizzey and Knight (1997).

Generation Length

The generation length of the Slender-billed Thornbill is estimated to be 8 to 13 years. A generation time of 12.3 years for the St Vincents Gulf subspecies was derived by Garnett et al. 2011), as age at first breeding of 1.0 years (extrapolated from congeners) and a maximum longevity of 23.5 years (extrapolated from the Striated Thornbill *A. striatus*).

Distribution

The Victorian subspecies of the Slender-billed Thornbill is restricted to suitable habitat (treeless mallee heaths) within the Big and Little Deserts and adjacent areas in south eastern South Australia (Garnett and Crowley 2000).

Many records of the taxon in the Victorian Biodiversity Atlas (VBA) are likely to be erroneous; sightings of the Slender-billed Thornbill are likely to have been confused with the similar-looking Buff-rumped Thornbill (Higgins and Peter 2002, p. 498). Slender-billed Thornbills are confined to knee-high heath in the Little Desert and Big Desert (Higgins and Peter 2002 op. cit.). All records outside that EVC are probably misidentifications (expert ornithological opinion).

Habitat

The taxon occurs in low heathland dominated by casuarinas and banksias, interspersed with other heath plants such as paperbarks and hakeas. They are most abundant 2-3 years after fire and appear to have a lower density in the dense high climax community that develops in the 30 year post-fire period. They favour heaths less than one metre high and, in the absence of fire, this vegetation can develop to a climax community dominated by Dwarf Sheoke and Desert Banksia on deep dry sands (Emison et al. 1987).

Threats

As is the case with many other ground dwelling native birds in south-eastern Australia, habitat clearance for agriculture has adversely affected this taxon. Large-scale fires within remaining habitat are frequent and could be affecting the thornbill's abundance, especially as many of the sub-populations are now more isolated than they were previously. The habitat of this taxon is fragmented and vulnerable to fire (Garnett and Crowley 2000).

The Mallee birds Conservation Action Plan (Boulton and Lau 2015) identified a similar suite of threats i.e. clearing and fragmentation of habitat, large fires, overgrazing and climate change. Extensive clearing of vegetation and changes in land use have significantly reduced the amount of available habitat, resulting in fragmented habitat supporting small, isolated populations. Fragmentation makes it difficult for birds to move to new habitat to avoid fire or find better quality vegetation. Fire is an important natural component of the Mallee and a valuable management tool, but it is also one of the most significant threats to mallee birds. In particular, large-scale fires can drastically reduce the availability of suitable habitats, posing a serious threat to species that require long-unburnt habitats. Grazing by animals, such as kangaroos, rabbits, feral goats and domestic livestock, removes the understorey vegetation that many mallee birds need for shelter and food. This leaves the birds vulnerable to predation and reduces habitat for the invertebrates that many feed on. The effects of grazing are particularly pronounced around artificial watering points, such as dams and bores.

Climate change is increasing the frequency and intensity of both fires and drought. In drought conditions, a burned area takes longer to regenerate than during times of higher rainfall.

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:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under criterion A2, and the future population reduction does not meet the threshold for eligibility under criterion A3.

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:

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 224 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

It is estimated to have 2 locations, as both subpopulations are threatened by inappropriate fire regimes and loss of loss of habitat.

It has a continuing decline in (i), (ii) and (iii) above. Frequent landscape-scale fires maintain pressure on the taxon following historic decline due to habitat loss. The habitat continues to be impacted, by fragmentation, overgrazing, and climate change leading to increasing frequency and intensity of both fires and drought.

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:

Ineligible under Criterion C

It is suspected that there are 2,000 to 5,000 mature individuals, but this qualifier is too weak and other thresholds under this criterion have not been met.

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 D2 as Vulnerable

The taxon is estimated to be very restricted.

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

References

BirdLife International (2018) Species factsheet: *Acanthiza iredalei* (downloaded from http://www.birdlife.org on 14/12/2018)

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