

Threatened Species Assessment

Struthidea cinerea Apostlebird

Taxonomy

Struthidea cinerea Gould, 1837

Current conservation status

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

Proposed conservation status

Vulnerable in Victoria

Criterion B2ab(i,ii,iii,iv,v)

This evaluation is largely based on the unpublished material in a detailed study by Robinson (2000).

Species Information

Description and Life History

Apostlebirds are dark ashy-grey birds with a short, robust black bill, brown flight feathers and rather full black tail (Pizzey 1989). Apostlebirds are garrulous, restless and aggressive birds which feed mainly on the ground and retreat to trees for security. They are a very sociable species, feeding, nesting and breeding in groups. They sometimes associate with White-winged Choughs (Pizzey 1989), and Grey-crowned Babblers, and can be tame around habitation, with reports of them feeding with poultry (Pizzey op. cit.). The taxon is a cooperative breeder occurring in small groups of 3-20 birds (Higgins et al. 2006). Robinson (2000) noted that: 'Throughout their range... Apostlebirds are endemic to mainland Australia'.

Generation Length

The generation length of Apostlebirds is inferred to be 3 to 5 years. Higgins et al. (2006, p. 801) noted that a (banded) adult Apostlebird was re-trapped at the banding site 4 years 4 months after banding. Dr Ian Voxxvould's work at Melbourne University indicates mature birds (capable of breeding) are older than two years of age. The Aust Bird and Bat Banding Database (ABBB database) has records of birds being re-trapped more than 9 years after banding. At a workshop to review the Bird Action Plan, held in August 2019, unpublished data suggested a figure of 3.4 years. Hence an estimated range is given here to cover all options.

Distribution

In Victoria Apostlebirds appear to be confined to two small, separate populations along the Murray River. One is the Cypress-pine woodlands in the Rutherglen district of north-eastern Victoria. The other is in the Lower Murray Valley in Black Box woodlands along the floodplain and Slender Cypress Pine-Belah woodlands on nearby sand-rises of the Victorian Mallee (Emison et al. 1987, ECC 1997, Robinson 2000).

Habitat

Robinson (2000) identified the key features of Apostlebird habitat as: an association with patches of woodland, rather than linear strips (especially patches larger than about 4 ha in size); very short ground cover with lots of bare ground for access to the ground-layer for seed-eating; association with edges of woodland patches or scattered woodland patches (rather than within the interior of large black box or pine remnants); seed sources (native grasses, chenopods, possibly cypress-pine seeds), and proximity to water.

A study of Apostlebirds in the Upper Murray Valley by Doug Robinson (2000) found that Apostlebirds were more likely to be encountered in areas with more cypress-pine habitat and where there are more patches of this habitat type. This suggests that past habitat clearance may be a major cause of the taxon's decline. Higgins et al. (2006) note that Apostlebirds show a tendency for association with ecotones.

Threats

Apostlebirds have previously been recorded in Gunbower State Forest prior to 1970 (Blakers et al. 1984, Victorian Biodiversity Atlas (VBA) data) but have not been observed in this locality since then and may be extinct in this region or at the best vagrants. The most noteworthy extinction is a population which used to live in Buloke woodlands around Edenhope and Naracoorte (BirdLife Australia Historical Atlas). No further records of the species have been made at this locality since 1897. This is the most southerly observation of the species in Australia. An Apostlebird group used to live in a *Callitris* pine remnant at Bearii (near Barmah), but disappeared in the 1950s (B. Labbitt via D. Robinson pers. comm. 1999).

An examination of reporting rates (the number of observations of a species as a percentage of the total number of bird lists) in VBA data suggests that Apostlebirds have undergone a decline in abundance in Victoria since detailed bird records began. Silveira et al. (1997) noted that there were only a few Apostlebird groups left in the north-east in a study on box-ironbark woodlands in Victoria. These workers also found that species richness of woodland birds was strongly correlated with regional tree cover (Bennett and Ford in Silveira et al. 1997). So as tree cover declines the rate of loss of woodlands birds increases.

The available information suggests that Apostlebirds have highly specific habitat requirements of certain dry woodlands. This habitat has suffered a severe reduction in cover and extent throughout the Victoria (ECC 1997). Apostlebirds once occurred in parts of the Northern and Wimmera Plains before extensive clearing of box-buloke and cypress pine woodlands took place earlier this century (Emison et al. 1987). Pine woodlands have been reduced to less than 1% of their former distribution in the upper Murray Valley (D. Robinson pers. comm. 1999) and the remaining patches of this habitat are being degraded and threatened by rising groundwater.

An examination of VBA records suggests that the gap between the two populations in Victoria has increased since about 1980. Specifically, the western end of the lower Ovens River population has now contracted eastwards and there are signs of a similar contraction on the eastern end of the north-west Victoria population. In addition, the north-western population shows signs of splitting into separate groups (even though this area largely consists of riverine conservation reserves and nearby national parks on the Victorian side of the border).

Higgins et al. (2006, p. 799) note that '...once area of preferred (cypress-pine) habitat falls below c. 5% cover (~4 ha?), populations decline.' and '...some indication that some declines have occurred in response to over-clearing or changes in land-use.' they also noted that Apostlebirds were 'Formerly poisoned by eating grain laced with phosphorous, intended to kill rabbits.'

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 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Evidence:

Eligible under Criterion B2 as Vulnerable

The Area of Occupancy (AoO) across the taxon's range is estimated to be 712 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

The taxon is estimated to be severely fragmented. The Apostlebird's distribution may be additionally affected by the proximity of sites to other groups of Apostlebirds. This is probably because communally breeding birds tend to be highly philopatric, with very limited dispersal from their natal territories. As a result, suitable areas of habitat that are too far from source populations are unlikely to be colonised.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above. The specific habitat requirements, continuing loss of habitat and ongoing threats suggest that Apostlebirds may be threatened with extinction in Victoria in the longer term. Although much current habitat is protected in conservation reserves and environmental flows have improved, habitat quality at key sites along the Murray River (P. Menkhorst pers. comm.), Robinson (2000) notes that: 'The most notable regional extinction of the species has been its loss from woodlands in the Dimboola-Naracoorte-Mt Gambier-Coleraine district of western Victoria and the adjacent parts of South Australia early this century.' Habitat continues to be lost as a result of the identified threats.

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 estimated that there are 1,500 to 2,700 mature individuals, but other thresholds under this criterion have not been met.

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Criterion D: Very small or restricted populations			
	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 km ² or number of locations ≤ 5

Evidence:

Ineligible under Criterion D

It is estimated that there are 1,500 to 2,700 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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