

## *Anseranas semipalmata* Magpie Goose

### Taxonomy

*Anseranas semipalmata* (Latham, 1798)

### Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2003).

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

### Proposed conservation status

Vulnerable in Victoria

Criterion D1

### Species Information

#### Description and Life History

Magpie Geese are large black and white birds, to 92 cm long, with a long neck and relatively long legs. Their plumage is white on the back, shoulders, rump, breast and belly; black on head, neck, wings and tail. The head has characteristic naked red skin on the face and a rounded knob on the crown (which is larger in males). The knob increases in size with age. Under-parts are white, with contrasting black edges on the under-wing. The bill, legs and feet are orange. Magpie Geese are quite different to most other waterfowl in having strongly clawed toes that are webbed only on their basal halves (hence the species name *semipalmata*). In flight, the Magpie Goose is a large black and white goose with mainly black under-part and contrasting white under-part. The wings are rounded with a slow flapping beat.

Magpie Geese are normally seen in groups around wetlands such as large freshwater lakes, slow moving waterways and swamps. In recent years the taxon has been recorded from Serendip Sanctuary (where they have been specifically bred in the 1960s-1980s), Edithvale wetlands near Melbourne and Church Swamp in far south west Victoria. Records outside the south west of the state are almost all of single birds (M. O'Brien pers. obs. October 2018).

#### Generation Length

The generation length of Magpie Geese is estimated to be 13 to 15 years. In the wild, the average life span is 15 years for adults but can be up to 27 years (Tulloch and McKean 1983; Tulloch 1985). These figures are based on the tropical (northern Australia) population and the temperate Australian population may be a smaller figure in a lower productivity environment of SE Australia (M. O'Brien pers. comm. Nov. 2018).

At a workshop to review the Bird Action Plan, held in August 2019, unpublished data suggested a figure of 8.1 years.

#### Distribution

The taxon is endemic to Australia and New Guinea. Emison et al. (1987) noted that 'Today most, and probably all, sightings are of birds (or their progeny) that have been released at various sites (e.g. Tower Hill) in attempts to re-establish them.' The taxon was re-introduced to various Victorian localities from Serendip Wildlife Research Station in 1964 with further introductions since 1973 e.g. 300 birds at Tower Hill plus other sites at Kyabram, Sale

# Anseranas semipalmata

## Magpie Goose

and Kerang, but the last two failed (Marchant and Higgins 1990). The birds are really only reliably recorded from southwestern Victoria, with few birds observed elsewhere in the state.

There have been no further (recent) reintroductions, although released birds are known to come and go from Serendip (M. O'Brien pers. comm.). There is also a population known across the border in SA (Bool Lagoon area) and birds likely move between Victoria and SA according to habitat and food availability (M. O'Brien pers. comm. October 2018).

### Habitat

Magpie Geese require tall erect vegetation for nest construction and support, over deep water, with or near large areas of aquatic grasses for food for young (Marchant and Higgins 1990, p. 1115). This habitat type is now much reduced in Victoria due to wetland alteration and drainage, and thus breeding opportunities are thought to be rare and/or limited (M.O'Brien pers. comm. 2018).

Marchant and Higgins (1990) noted that '...in former range (the taxon) used large shallow wetlands formed by runoff e.g. Bool Lagoon (SA)'. The distribution is determined by the presence of surface water (Marchant and Higgins 1990).

### Threats

The taxon was originally extinct in south-eastern Australia by 1920-30. It is unlikely to return to the original population size of many thousands as observed by early settlers, due to recent and current water management of suitable wetlands and historic loss of Deep Freshwater Marshes in SE Australia (M. O'Brien pers. comm. Nov. 2018).

Habitat modification (wetland drainage etc.), shooting and conflict with agriculture are usually thought to have caused the extirpation of this taxon from south-eastern Australia (Emison et al. 1987). Birds were previously shot and poisoned by farmers in response to their grazing on crops (Frith 1977). Hunting of geese for game and food purposes contributed to the initial decline. Studies have documented the effects of lead contamination on Magpie Geese as a consequence of contamination of breeding sites by lead pellets (Harper and Hindmarsh 1990), however lead shot has now been phased out.

### 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%
<p>A1 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>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.</p> <p>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]</p> <p>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.</p> <p>based on any of the following:</p> <p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>			

### 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 <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
B2. Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
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, based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA), is estimated to be 68,358 km<sup>2</sup> which exceeds the threshold for criterion B.

The Area of Occupancy (AoO) across the taxon's range, based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA, is estimated to be 712 km<sup>2</sup> but other thresholds under this criterion have not been met.

# Anseranas semipalmata Magpie Goose

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 700 to 1,000 mature individuals, but other thresholds under this criterion have not been met.

Criterion D. Very small or restricted population <sup>⊠</sup>		Critically Endangered <sup>⊠</sup>	Endangered <sup>⊠</sup>	Vulnerable <sup>⊠</sup>
Number of mature individuals (observed or estimated) <sup>⊠</sup>		< 50 <sup>⊠</sup>	< 250 <sup>⊠</sup>	< 1,000 <sup>⊠</sup>
D2. Only applies to the VU category <sup>¶</sup> 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. <sup>⊠</sup>		- <sup>⊠</sup>	- <sup>⊠</sup>	D2. Typically: <sup>¶</sup> AoO < 20 km <sup>2</sup> or number of locations ≤ 5 <sup>⊠</sup>

## Evidence:

### Eligible under Criterion D as Vulnerable

The taxon is estimated to have 700 to 1,000 mature individuals. There have been no dedicated surveys to ascertain the population size and preferred habitats of Magpie Geese in Victoria, but it is estimated there may be (at most) up to 1000 birds, all of which have arisen from reintroduction projects in the 1960s-1980s.

As noted in Emison et al. (1987, p. 66), 'Today most, and probably all, sightings are of birds (or their progeny) that have been released at various sites (e.g. Tower Hill) in attempts to re-establish them.'

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

## References

- DSE (2013) *Advisory List of Threatened Vertebrate Fauna in Victoria 2013*. Department of Sustainability and Environment, Melbourne
- Emison, W.B., Beardsell, C.M., Norman, F.I.N, Loyn, R.H. and Bennett, S.C. (1987) *Atlas of Victorian Birds*. Department of Conservation Forests and Lands, Melbourne. Royal Australasian Ornithologists Union, Melbourne.
- Frith, H.J. (1977) *Waterfowl in Australia*. Reed: Sydney. (pp. 243-255).
- Harper, M.J. and Hindmarsh, M. (1990) Lead poisoning in Magpie Geese, *Anseranas semipalmata*, from ingested lead pellet at Bool Lagoon Game Reserve (south Australia). *Aust. Wildl. Res.* 17: 141-145.
- Marchant, S. and Higgins, P.J. (eds)(1990) *Handbook of Australian, New Zealand and Antarctic Birds..* Oxford University Press, Melbourne.
- Nye E.R. Dickman C.R. and Kingsford R.T. (2007) A wild goose chase - temporal and spatial variation in the distribution of the Magpie Goose (*Anseranas semipalmata*) in Australia, *Emu - Austral Ornithology*, 107:1, 28-37, DOI: 10.1071/MU05012
- SAC (2003). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 684 *Anseranas semipalmata*.
- Tulloch, D.G. (1985). The Magpie Goose (*Anseranas semipalmata*) and the black soil plains: A biological case history of waterbirds in coastal north Australia. Pp. 285-94 in K.N. Bardsley, J.D.S. Davie and C.D. Woodroffe (eds.) *Coasts and Tidal Wetlands of the Australian Monsoon Region*. Australian National University, Mangrove Monograph No. 1.
- Tulloch, D.G. and McKean, J.L. (1983) Magpie Goose populations in the coastal plains of the Northern Territory. *Corella* 7: 32-36.