Threatened Species Assessment

Polytelis swainsonii
Superb Parrot

Taxonomy

Polytelis swainsonii (Desmarest, 1826)

Current conservation status

Listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 1991).

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

Proposed conservation status

Endangered in Victoria

Criterion D

Species Information

Description and Life History

The Superb Parrot is a medium-sized (length 40 cm, weight 130-160 g) parrot with bright green plumage and a long tail. The males and females are dimorphic. Males are generally bright green, though slightly paler and yellowish below, with a blueish wash on the crown and nape, a bright-yellow face and bright red band across the throat, slightly darker green tail, and a blue leading edge to the upper wing. The bill is brownish red, the eyes red; and the legs and feet are grey. Females are paler than males, being generally dull green with a blueish-green wash to the face, grading to greyish green on the upper throat, a pale pinkish patch on the lower throat, and a dull yellow-green underbody with pink-red thighs. The bill is brownish red, the eyes crimson and the legs and feet grey. Juveniles are generally similar to adult females except without any blueish wash to the face or pink wash to the throat (DoEE 2019). Higgins (1999) provides more details on the taxon's ecology and distribution.

Generation Length

The generation length of the Superb Parrot is estimated to be 5 to 8 years. This is based on Garnett et al. (2011, p. 429) which indicates three generations = 19 years. Further, BirdLife International (2019) and Garnett and Crowley (2000) indicates an (estimated) Generation Length of 5 and 5.4 years respectively, however reliability for these figures was recognised as 'Low'. Baker-Gabb (2011) noted a maximum longevity in the wild of 14 years.

Distribution

The Superb Parrot occurs only in south-eastern Australia. It is found in NSW, the ACT and northern Victoria, where it occurs on the inland slopes of the Great Divide and on adjacent plains, especially along the major river-systems; vagrants have also been recorded in southern Queensland (Department of the Environment 2018). In Victoria, Superb Parrots occur mainly between Cobram and Echuca, centred on the Barmah forest area, in the Riverina bioregion. Birds occasionally range further east to Wangaratta and south to Shepparton (Emison et al. 1987).

Habitat

Superb Parrots mainly inhabit forests and woodlands dominated by eucalypts, especially River Red Gum (E*ucalyptus camaldulensis*) and box eucalypts such as Yellow Box (*E. melliodora*) or Grey Box (*E. microcarpa)*.

The taxon also seasonally occurs in Cypress-pine *(Callitris)* and Boree (*Acacia pendula*) woodlands. The taxon uses a number of habitats for different activities. Breeding usually occurs in either River Red Gum forests and woodlands or box woodland. In Victoria, Superb Parrots usually breed in forests dominated by large mature River Red Gums, typically close to watercourses, though nests are also occasionally located in Blakely's Red Gum (*E. blakelyi)*, Grey Box, Red Box (*E. polyanthemo*s) and Inland Red Box (*E. intertexta*) (DoEE 2018). In the Riverina Region of NSW and adjacent areas of Victoria, the Superb Parrot forages in box eucalypt woodland, particularly that dominated by Yellow Box or Grey Box, and occasionally Black Box (*E. largiflorens*).

Threats

Baker-Gabb (2011) noted that the major threats to Superb Parrots are loss and degradation of habitat: There has been widespread habitat loss across the Superb Parrot's range, primarily involving the destruction or degradation of box-dominated woodlands for agricultural purposes (Baker-Gabb 2011). Estimates suggest that in some parts of the range, such as the NSW south western slopes, over 90 percent of the suitable habitat has been cleared with remaining patches occurring mostly along roadsides or in small scattered remnant patches on private land (Baker-Gabb 2011).

Manning et al. (2013) has also shown the loss of large hollow bearing trees will continue to decline into the future unless urgent action is taken. The loss of old, hollow-bearing trees is of particular concern as it is thought that it takes at least 120 years - but likely much longer - before trees can form hollows suitable for Superb Parrot nests (Manning et al., 2004). Live nest trees were impacted by forestry operations prior to 1992, but since then prescriptions have been in place to protect all known nest trees and timber harvesting is now excluded from most of the habitat. Artificially high water levels resulting from flow management for irrigation may also affect live nest trees (TSSC 2016). Much of the remnant habitat is also degraded, with regeneration of nest trees prevented by overgrazing by stock and rabbits (*Oryctolagus cuniculus*), and by inappropriate fire regimes (Webster and Ahern 1992).

With a dearth of potential nest sites, competition with other species, particularly the common Starling (Sturnus vulgaris), Galah (*Eolophus roseicapilla*) and the Little (*Cacatua sanguinea*) and Long-billed Corella (*C. tenuirostris*) may become a problem (Webster 1988). There are also anecdotal reports of feral honeybees taking over superb parrot nesting hollows, although the significance and level of impact on the species is not known.

Superb Parrots are often killed in collisions with vehicles as they frequently use remnant habitat found along roadsides. The impacts of this are compounded in rural areas due to the propensity for the parrots to feed in flocks and their willingness to forage on spilled grain. In these instances, many individuals may be killed in a single incident.

There are many wild caught birds held in captivity in Australia (Garnett 1992). Although accurate estimates are not available, it is believed that in the past many thousands of wild caught birds have illegally entered the aviculture trade (Baker-Gabb 2011). The extent of this problem remains unknown.

Superb Parrots are susceptible to Psittacine Beak and Feather disease (PBFD), a fatal disease confined to Old and New World parrots. PBFD is typically transferred between adults and nestlings. The ongoing loss of nest hollows is likely to intensify competition and use of nest trees, and thus may increase the likelihood of transmission of the disease.

Bioclimatic modelling has shown that the superb parrot is highly sensitive to climate change (Manning et al., in review). Modelling using the BIOCLIM climatic predictive model showed that the bioclimatic range of the superb parrot will decline by around 47% by 2050 and by 75% by 2070. The future bioclimatic core range of the superb parrot will likely focus around the ACT and an area to the immediate north.

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 15 to 24 years is inferred to be 25 to 35%, based on (b) above.

DoEE (2018) noted 'The range, and thus the population size, of the Superb Parrot has contracted in Victoria (Webster & Ahern op. cit.)'

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 Area of Occupancy (AoO) is estimated to be 323 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas, but other thresholds under this criterion have not been met.

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 150 to 200 mature individuals, but 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 D as Endangered

The taxon is estimated to have 150 to 200 mature individuals. Ian Davidson (pers. comm. March 2019) noted that the number of mature individuals is not likely to be >200 and that it is not known whether the taxon is stable or declining due to the lack of any further survey work since Webster and Ahern (1992).

TSSC (2016) noted 'There are no current agreed population estimates for the Superb Parrot. While the Action Plan for Australian Birds 2000 estimated the total population as approximately 6,500 adult birds and declining (Garnett and Crowley 2000), the re-assessment of the species for the Action Plan for Australian Birds 2010 (Garnett et al. 2011) concluded that the number may be substantially greater than 10,000 with no evidence of recent declines. The 2010 Action Plan estimates are not generally agreed as accurate, as they were based primarily on an extrapolation from a 2001 study that found nearly 1,500 parrots in 53 out of 81 sites across an area of 23,000 km² (Manning et al. 2006) and that study was designed to determine habitat use and not to estimate population size or abundance.'

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

References

Baker-Gabb, D. (2011) *National Recovery Plan for the Superb Parrot Polytelis swainsonii*. Department of Sustainability and Environment, Melbourne.

BirdLife International (2019) *Species factsheet: Polytelis swainsonii*. (downloaded from http://www.birdlife.org on 28/02/2019)

DoEE (2019) *Polytelis swainsonii: in* Species Profile and Threats Database. Department of the Environment and Energy, Canberra. (downloaded from http://www.environment.gov.au/sprat on 12 March 2019)

DSE (2013). *Advisory List of Threatened Vertebrate Fauna in Victoria 2013*. Department of Sustainability and Environment, Melbourne. Retrieved from: https://www.environment.vic.gov.au/__data/assets/pdf_file/0014/50450/Advisory-List-of-Threatened-Vertebrate-Fauna_FINAL-2013.pdf

Emison, W.B., Beardsell, C.M., Norman, F.I., Loyn, R.H. and Bennett, S.C. (1987) *Atlas of Victorian Birds.* Superb Parrot, p. 148. Department of Conservation, Forests and Lands, Royal Australasian Ornithologists Union, Melbourne.

Garnett, S.T. and G.M. Crowley (2000) *The Action Plan for Australian Birds 2000.* Superb Parrot, pp: 311-313. Canberra, ACT: Environment Australia and Birds Australia

Garnett, S., Szabo, J. and Dutson, G. (2011). *The Action Plan for Australian Birds 2010*. CSIRO Publishing, Melbourne.

Higgins, P.J. (ed.) (1999) *Handbook of Australian, New Zealand and Antarctic Birds. Volume 4 - Parrots to Dollarbird*. Superb Parrot, pp: 287-295. Oxford University Press, Melbourne.

Manning, A.D., Lindenmayer, D.B. and Barry, S. (2004) The conservation implications of bird reproduction in the agricultural "matrix": a case study of the vulnerable superb parrot of south-eastern Australia. *Biological Conservation* **120(3)**: 363-374.

Manning, A.D., Lindenmayer, D.B., Barry, S. and Nix, H.A. (2006) Multi-scale site and landscape effects on the vulnerable superb parrot of south-eastern Australia during the breeding season. *Landscape Ecology* **21**: 1119-1133.

Manning, A.D., Gibbons, P., Fischer, J., Oliver, D.L. and Lindenmayer, D.B. (2013), Hollow futures? *Animal Conservation* **16:** 395-403. https://doi.org/10.1111/acv.12006

SAC (1991). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 162 *Polytelis swainsonii*

TSSC (2016) *Conservation Advice: Superb Parrot Polytelis swainsonii.* EPBC Act Threatened Species Scientific Committee, Canberra.

Webster, R. and L. Ahern (1992) *Management for the conservation of the Superb Parrot Polytelis swainsonii in New South Wales and Victoria.* Report to New South Wales National Parks and Wildlife Service and Department of Conservation and Natural Resources, Melbourne.