Threatened Species Assessment

Neophema pulchella
Turquoise Parrot

Taxonomy

Neophema pulchella (Shaw, 1792)

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 1992).

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

Proposed conservation status

Vulnerable in Victoria

A2ace+3ce

Species Information

Description and Life History

The Turquoise Parrot is about 200-220mm long with a 320 mm wingspan. Males are the most brightly coloured with highly distinctive plumage, bright green posterior and a turquoise-blue crown face. It has a chestnut-red patch on the upper-wing, with turquoise-blue shoulders, grading to deep at the flight-feathers. The upper margins of the breast have an orange tint, whilst generally a yellow abdomen is complemented by an orange centre. The female Turquoise Parrot and immature adults are somewhat duller in colour, have whitish lores, a green throat and breast and no chestnut-red on the shoulder or the upper-wing area (SWIFFT 2019).

This taxon rarely forms large flocks and a commonly observed in pairs or small parties of 6-8 individuals (Higgins 1999). Larger flocks of 20-30 birds may occur from autumn and through winter after the breeding season. The taxon's main breeding season is from August to January (August to November in North-east Victoria). Turquoise Parrots nest in hollow-bearing trees, either dead or alive, and also in hollows in tree-stumps (dead, ringbarked, burnt or coppicing), fallen logs and fence posts. A standard clutch usually consists of 2-5 eggs, although up to 6 eggs has been recorded. Some breeding pairs may also raise a second brood during summer months (Higgins 1999). Both parents feed the young which remain in the hollow for about 4 weeks after the 18 day incubation period. The birds predominantly eat seeds and shrub fruits, some of which are not present all year round. They will also eat seed of introduced grasses e.g. *Briza maxima* (Quaking Grass) (B. Quinn pers. comm.).

Generation Length

The generation length of the Turquoise Parrot is estimated to be 3 to 4 years. This is based on congener Orange-bellied Parrot and supported by Garnett and Crowley (2000). BirdLife International (2019) give a higher figure of 4.9 years.

Distribution

The Turquoise Parrot's range extends from east Gippsland in Victoria to New South Wales and into south-east Queensland. Its distribution is considered patchy and primarily determined by areas of suitable habitat (BirdLife Australia 2016). In Victoria, the Turquoise Parrot is mainly found in the north-east, mainly Chiltern-Mt Pilot National Park (NP) and East Gippsland. In East Gippsland it predominantly occurs around Mallacoota, but also north along

the Wingan River to Wangarabell, and near Bairnsdale and Bruthen; sometimes farther north along Snowy River, near Suggan Buggan.

Turquoise Parrots appeared in the Labertouche North area of Bunyip State Park after the Black Saturday fires in February 2009). Bruce Quin, Clint Schipper and Mike Harrison found a male feeding a juvenile in January 2010. Turquoise Parrots were recorded in Bunyip State Park during subsequent years, with the last record on eBird being two individuals in November 2018, indicating that the population in Bunyip State Park is small.

Turquoise Parrots have been seen in Yellingbo Nature Conservation Reserve during recent years, though just a single individual on each occasion. In the years 2014, 2017 and 2018, a lone female was seen and in 2019, a lone male was recorded. The previous record of this species in Yellingbo prior to these listed years was in 1996. However, there is no evidence of populations becoming established at Yellingbo yet, nor Glenburn.

Habitat

In north-east Victoria and Gippsland Turquoise Parrot populations occur in lowland sclerophyll forest or coastal heathland. These fragmented populations are suggested to be dependent on the ecotone between forest and heathland. Dead trees comprise an important part of the habitat and are preferred for lookout posts and nesting.

Threats

Historically, the main threat to the Turquoise Parrot was clearing of forest and woodland for agriculture (NSW Scientific Committee 2009). In the early part of the century the Turquoise Parrot suffered a severe decline in numbers, with certain observers even regarding it as extinct. Populations recovered somewhat from the 1930s onward (Blakers et al. 1984). In 1990 populations in the north-east of the state were considered to be increasing in distribution and numbers (Quin 1990). However more recent evidence suggests that Turquoise Parrot numbers have declined considerably in the sections of the Chiltern-Mt Pilot NP.

The decline occurred from the mid-1990's onwards, and may be due an apparent understorey biomass reduction during the Millennium Drought. Presumably food availability for the Turquoise Parrot declined as a result of this reduction in understorey biomass. Increases in kangaroo numbers may also have contributed to reduction of the field layer.

Females next relatively close to the ground, in stumps or branch hollows, and may be susceptible to predation by foxes (*Vulpes vulpes*). Increasing fire frequency and intensity is likely to contribute to the further loss of hollows.

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 next 10 to 12 years is suspected to be 15 to 35%, based on (c) and (e) above.

In 1990, populations in the north-east of the state were considered to be increasing in distribution and numbers (Quin 1990). However more recent evidence suggests that Turquoise Parrot numbers have declined in the sections of the Chiltern-Mt Pilot National Park. 'Birdata' indicate that the proportion of surveys in which Turquoise Parrots are recorded dropped from approximately fourteen in 2010 to ten in 2020. In Chiltern-Mt Pilot the reporting rate dropped from fourteen in 2010 to six in 2020. The birds are vocal and active in the open, and are unlikely to be overlooked (B. Quin pers. comm.).

These data are supported by personal observations by Bruce and Darren Quin who have made yearly trips to Chiltern and have monitored the sites where Turquoise Parrots nested, foraged and roosted during the late 1980s and they believe that there have been lower numbers of Turquoise Parrots, often none, recorded in these areas.

Eligible under Criterion A3 as Critically Endangered

The population reduction over the next 10 to 12 years is suspected to be 10 to 30%, based on (c) and (e) above.

This is based on the likelihood of climate change-driven increases in fire frequency and intensity. Since there is no clear reason for the decline in Chiltern-Mt Pilot and there has been no change of management, it is possible that the current decline will continue.

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, based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA), is estimated to be 82,760 km² 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 1,115 km² 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 suspected that there are 3,000 to 4,000 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:

Ineligible under Criterion D

It is estimated that there are 4000 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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