

Eucalyptus yarraensis Yarra Gum

Taxonomy

Eucalyptus yarraensis Maiden & Cabbage

Current conservation status

Categorised as Rare in the 2014 Advisory list of rare or threatened flora (DEPI 2014).

Proposed conservation status

Critically Endangered in Victoria

Criteria A2bce+4bce

Species Information

Description and Life History

Tree to 15 m tall; bark rough over whole trunk and to 10 cm diam. branches. Juvenile leaves petiolate, alternate, elliptic to ovate, to 8 cm long, 5 cm wide, glossy, green; adult leaves petiolate, elliptic to broadly lanceolate, undulate, 6-10 cm long, 1.2-3 cm wide, concolorous, glossy, green; reticulation dense, apparently glandless. Inflorescences axillary, unbranched; peduncles to 0.8 cm long, 7-flowered; buds pedicellate, diamond-shaped, to 0.5 cm long, 0.3 cm diam., scar present; operculum conical; stamens inflexed; anthers dorsifixed, cuneate; ovules in 4 vertical rows; flowers white. Fruit pedicellate, obconical, to 0.5 cm long, 0.5 cm diam.; disc raised and annular; valves 3 or 4, slightly exserted; seed brown-black, flattened-ellipsoid, surface rough, lacunose, hilum ventral. Flowers September-December. It is distinguished from *Eucalyptus ovata* by the completely rough bark and smaller leaves, buds and fruits. Fresh leaves steeped in hot water emit a bitter-almond (cyanic) odour, a reaction not observed in *E. ovata* (VicFlora 2018).

Generation Length

The generation length of *Eucalyptus yarraensis* is inferred to be 80 to 200 years. It is likely to have a potential life span of several hundred years, and is slow growing with rough bark that provides some resilience to fire. Trees presumably reach reproductive maturity within ten years.

Distribution

The taxon's distribution extends west from Glengarry near Traralgon to Melbourne, and north-west to Daylesford and Ararat. Collections of small-budded and fruited swamp gums from east of Cavendish may be this taxon. Very small-fruited forms of the taxon occur in remnant stands in outer south-eastern to north-eastern Melbourne suburbs such as Scoresby, Wantirna, and Yan Yean.

Habitat

The habitat of the taxon is damp flats, lower-slopes, and low-gradient gullies.

Threats

Populations of this taxon are at risk from a range of threats across the distribution of remnant populations. These variously include drying of habitat through climate change, increased frequency and intensity of fire, restriction of

regeneration from grazing or invasion of competitive grass weeds, and incremental losses from land clearing, including for fire breaks, and works along roadsides.

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 style="text-align: center;"><i>based on any of the following:</i></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:

Eligible under Criterion A2 as Critically Endangered

The population reduction over the past 240 to 600 years is inferred to be 60 to 90%, based on (b), (c) and (e) above.

While some remnants persist in some forest areas, extensive areas which included suitable prior habitat have been cleared for agriculture or development.

The causes of the reduction may not have ceased, be understood or be reversible.

Eligible under Criterion A4 as Critically Endangered

The population reduction over any 240 to 600 year period, including both past and future (up to 100 years in the future), is inferred to be 60 to 85%, based on (b), (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

This is based on the past decline due to clearing, and a possible unquantified future decline.

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 B as Vulnerable

The Area of Occupancy (AoO) is estimated to be 1,636 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented, has 6 locations, and has a continuing decline in (ii), (iii), (iv) and (v) above.

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 <u>C1</u> or <u>C2</u>				
<u>C1</u>	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)
<u>C2</u>	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 as Data Deficient

There is insufficient evidence to determine the number of mature individuals, as no broad-scale/regional population counts are available.

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

Evidence:

Eligible under criterion D2 as Vulnerable

The taxon is inferred to be very restricted.

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

References

DEPI (2014). *Advisory list of rare or threatened plants in Victoria - 2014*. Department of Environment and Primary Industries, Melbourne.

SAC (1992). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 208 *Eucalyptus yarraensis*

VicFlora (2018). Flora of Victoria, Royal Botanic Gardens Victoria: *Eucalyptus yarraensis*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/a80d1767-1be6-4844-a167-ab296eb3333f>