

Eucalyptus agglomerata Blue-leaf Stringybark

Taxonomy

Eucalyptus agglomerata Maiden

Current conservation status

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

Proposed conservation status

Vulnerable in Victoria

Criteria A3bce+4abce

Species Information

Description and Life History

Tree to 40 m tall; bark rough to the small branches, stringy, pale grey over brown. Juvenile leaves petiolate, opposite and discolorous for few pairs then alternate, ovate, undulate, initially scabrous above and below but soon smooth above and scabrous only on margins and midrib, later leaves glabrous, to 15 cm long, 6 cm wide, glossy, green; adult leaves petiolate, broadly lanceolate to lanceolate, oblique, 7.5-11.5 cm long, 1.4-3 cm wide, concolorous, glossy, blue-green; reticulation sparse, with numerous island oil glands. Inflorescences axillary, unbranched; peduncles to 1.3 cm long, 11 (or more)-flowered; buds sessile, fusiform, to 0.8 cm long, 0.3 cm diam., no scar (single operculum); operculum acutely conical; stamens irregularly flexed; anthers dorsifixed, reniform; ovules in 2 vertical rows; flowers white. Fruit sessile, depressed-hemispherical, crowded, often with flattened sides, to 0.6 cm long, 1 cm diam.; disc level to slightly ascending; valves (3)4, rim level; seed dark brown, glossy, smooth, pyramidal but distorted by one curved face, hilum terminal. Flowers Oct. to Jan. (VicFlora 2019).

The tree freely coppices after fires, although stems must be ~15 years old or more when the fire burns through to maintain living epicormic buds. The plants are lignotuberous, so even small specimens have some (basal) capacity to re-sprout. There is very scant establishment between fires. Regeneration is by seed and can be episodic and stochastic. They are long lived mature trees with an aerial seed store (although the seed is replaced probably annually).

Generation Length

The generation length of *Eucalyptus agglomerata* is projected to be 80 to 300 (midpoint 200) years. Maximal flowering and seed set happens when trees are well beyond their first flowering. It takes decades or more to establish maximal flowering and seed set. This taxon is most common on skeletal soils on ridge tops and upper slopes, so growth rates are relatively low.

Distribution

The taxon is restricted to ridge tops and upper slopes from Wangarabell west towards Martins Creek in East Gippsland.

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Habitat

The taxon is restricted to ridge tops and upper slopes in relatively high rainfall sites with appreciable summer rainfall, and on relatively poor soils (sedimentary, upper slope, largely skeletal). It occurs as a dominant in open-forest with heathy or tussock grass-dominated lower strata.

Threats

Forestry operations are ongoing within the general region but tend not to target forests occupied by this taxon. Regrowth forests are often dominated by *E. sieberi*, which may out-compete *E. agglomerata*. Sambar Deer (*Rusa unicolor*) are increasing across their range and the taxon may be subject to damage and disturbance from trampling and antler-rubbing. Increased fire frequency and intensity, at intervals greater than the taxon's tolerable fire intervals, may hamper recruitment.

Spatial analysis of likely habitat on all land tenures for *E. agglomerata* indicates that 55% occurs within the Comprehensive, Adequate and Representative (CAR) reserve system, including parks and reserves and special protection zones. Further areas are excluded from harvesting by prescription under the Victorian Code of Practice for Timber Production 2014 (the Code). No species-specific protections for the taxon are included in the Code.

In recent years, modified harvesting and forest regeneration practices have been implemented in native forest that are designed to further mitigate the potential threat from forestry operations to threatened species and their habitats.

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>
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Evidence:

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 100 years is suspected to be 0 to 40% (midpoint 20%), based on (b), (c) and (d) above.

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It is difficult to predict but there may be higher fire frequency from planned burns and bushfires, localised mechanical disturbance due to forest and fire management operations and increased pressure from feral deer during juvenile growth stages.

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:

Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 2,043 km² and the Area of Occupancy (AoO) is estimated to be 186 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 <u>C1</u> or <u>C2</u>				
<u>C1</u>	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				

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Evidence:

Ineligible under Criterion C

It is inferred that there are 3,000 to 25,000 (midpoint 12,000) mature individuals, but this qualifier is too weak. The taxon has been little visited or studied. It is very restricted in Victoria, but locally common to co-dominant.

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 km ² or number of locations ≤ 5

Evidence:

Ineligible under Criterion D

It is inferred that there are 3,000 to 25,000 (midpoint 12,000) mature individuals.

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. Retrieved from:

https://www.environment.vic.gov.au/__data/assets/pdf_file/0021/50448/Advisory-List-of-Rare-or-Threatened-Plants-in-Victoria-2014.pdf

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Eucalyptus agglomerata*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/e7f0e16a-f54c-43c0-83dd-52fc9c735a8d>