

Eucalyptus cinerea subsp. *victoriensis* Beechworth Silver Stringybark

Taxonomy

Eucalyptus cinerea subsp. *victoriensis* Rule & N.G. Walsh

Previously *E. aff. cinerea* (Beechworth)

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria A2ace+3ce; B1ab(i,iii,iv,v)+2ab(i,iii,iv,v)

Species Information

Description and Life History

Tree to 30 m tall; bark thick, fibrous, furrowed longitudinally, grey over red-brown, persistent into canopy. Canopy of mature tree composed of juvenile and intermediate leaves. Juvenile leaves sessile, opposite for many pairs, orbicular to broadly ovate, 2-3 cm long and wide, glaucous, persisting into the adult canopy; adult leaves petiolate, alternate, lanceolate to slightly falcate, 6-10 cm long, 1-2.3 cm wide, concolorous, dull, grey-green; reticulation dense, with few to numerous, island oil glands, confined to outer canopy of mature trees. Inflorescences axillary, unbranched; peduncle to 2-7 cm long, 3-flowered; buds subsessile or with central bud shortly pedicellate, diamond-shaped, 5-7 mm long (not including pedicel to 2 mm), 3-4 mm diam., scar present; operculum obtuse-conical; stamens inflexed; anthers dorsifixed, cuneate; ovules in 4 vertical rows; flowers white. Fruit sessile or shortly pedicellate, obconical to campanulate, 4-5 mm long, 3-5 mm diam.; disc narrow, flat or slightly ascending raised-annular; valves 3 or 4, exserted; seed grey-brown to blackish, cuboid flattened-ellipsoid, minutely pitted, hilum ventral. Flowers March-May (VicFlora 2018).

Generation Length

The generation length of *Eucalyptus cinerea* subsp. *victoriensis* is suspected to be 40 to 120 years (midpoint 80 years). This taxon appears to be regarded as having a relatively short life span for a eucalypt. Trees reach reproductive maturity within ten years. Various expert opinions on longevity range from 80 to more than 150 years, and for generation time 50 to 80 years. On this basis a generation length of 40 to 120 years is proposed to cover this range of opinion.

Distribution

The taxon is confined to hilly country to the north and north-east of Beechworth (VicFlora 2018).

Habitat

The taxon occurs on clay loam soils derived from granite.

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Threats

The taxon was formerly commoner in the Beechworth area but is now reduced due to clearing for agriculture (VicFlora 2019). Current threats to the taxon include small population sizes (with the majority of stands restricted to roadsides or small and vulnerable remnants); poor recruitment; competition from weedy perennial grasses; and climate drying and drought associated with climate change.

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 A2 as Endangered

The population reduction over the past 120 to 360 years is inferred to be 50 to 75%, based on (a), (c) and (e) above.

Given the patchwork of remnant sites on roadsides around Wooragee in areas which are around 90% cleared, it is estimated that there has been a probable reduction of at least 60% since settlement, with around 40% suspected in the last 100 years. Recruitment is poor on roadsides, and dead trees were noted at one site.

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

Eligible under Criterion A3 as Endangered

The population reduction over the next 100 years is suspected to be 30 to 50%, based on (c) and (e) above.

A future decline over the next 80 years would be expected to be at least 30% in the absence of active remedial management of populations, through mortality and lack of recruitment.

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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 B1 as Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 71 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to have two locations. The few stands within forest areas are considered to face a different set of threats to those on roadsides and very small remnant patches in predominantly cleared areas.

It is inferred to have a continuing decline in (i), (iii), (iv) and (v) above, based on the invasion of competitive perennial grasses being an ongoing threat, as is the likelihood of patchy disturbance to roadside vegetation.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 44 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, the taxon has two locations and has a continuing decline in (i), (iii), (iv) and (v) above.

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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 150 to 1,500 mature individuals, but this qualifier is too weak.

Criterion-D. Very small or restricted populations		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:

Eligible under criterion D2 as Vulnerable

The taxon is estimated 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. 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 (2018). Flora of Victoria, Royal Botanic Gardens Victoria: *Eucalyptus cinerea* subsp. *victoriensis*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/c2ff4987-3827-45b7-8fb6-2315baff8ef1>