

Correa lawrenceana var. *grampiana* Grampians Mountain-correa

Taxonomy

Correa lawrenceana var. *grampiana* Paul G. Wilson

One of about 10 varieties of *C. lawrenceana* in Vic, Tas, NSW and Qld, some of which are undescribed. All should be elevated to specific rank, including *C. lawrenceana* var. *grampiana* (G. Carr unpubl. data).

Current conservation status

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

Proposed conservation status

Endangered in Australia

Criteria B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a shrub to 2.5 m high. Leaves coriaceous, elliptic, 2–4 cm long, 1–1.7 cm wide, obtuse, cuneate to rounded at base, softly velvety beneath. Flowers solitary, axillary; peduncle 2–5 mm long (terminal bracts minute and deciduous); pedicel to 6 mm long; calyx deeply cup-shaped, 5–7 mm long, prominently undulate or 4-dentate at margin, ferruginous-tomentose; corolla broad-cylindric, 1.5–2.5 cm long, velvety with thick cream to yellow-brown tomentum. Flowers mostly spring (VicFlora no date).

The taxon is a long-lived shrub, assumed to be a post-fire resprouter. It reproduces only by seed, with recruitment continuous or pulsed post-fire from a long-lived soil-stored seedbank. Its breeding system is probably wholly or predominantly outcrossing. It is pollinated by honeyeaters, especially by Eastern Spinebills and New Holland Honeyeaters, and gene-flow via pollen on birds is limited to several hundreds of metres. Its seeds are explosively ejected from fruits up to perhaps five metres, with secondary dispersal of seeds by ants at several tens of metres only, which eat the elaisomes and then bury the seeds.

Generation Length

The generation length of *Correa lawrenceana* var. *grampiana* is suspected to be 50 to 80 years. This is based on the taxon's longevity, continuous recruitment mode, and assumed post-fire resprouting.

Distribution

C. lawrenceana var. *grampiana* is endemic to the Grampians at Mt William, Major Mitchell Plateau, Mt Thackeray, and Mt Rosea, and the summit of Mt Langi Ghiran.

Habitat

The taxon occurs at or near the summits of peaks in the Grampians at c. 900-1150 m elevation in very rocky (at least 70% rock cover) low open heathy woodland on sandy soil derived from sandstone. At Mt Langi Ghiran at elevation of c. 800-900 m, it occurs in low open woodland on very rocky boulder strewn granitic terrain, on coarse-grained granitic soils.

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Threats

Threats include the effects of climate change such as decreased rainfall, increased evaporation, and extreme temperatures, increased intensity and frequency of fire, weed invasion, pollen-robbing of flowers by introduced honeybees that are not effective pollinators, and browsing by Sambar Deer (*Rusa unicolor*).

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 30%, based on (c) above.

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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 795 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented, based on the limited dispersal ability of the taxon, the barriers to dispersal, and the lack of habitat separating them.

It is observed to have 1 location, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above, due to the identified threats, particularly declining rainfall, weed invasion, and Sambar Deer browsing.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 48 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon is severely fragmented, has 1 location, and has a continuing decline in (i), (ii), (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 as Data Deficient

No reliable estimate of the total population size for the taxon is available, however it probably exceeds 5000 plants.

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



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