

Threatened Species Assessment

Correa lawrenceana var. *genoensis* Genoa River Correa

Taxonomy

Correa lawrenceana var. *genoensis* Paul G. Wilson

This variety and others in the *C. lawrenceana* complex need to be elevated to specific rank (G. Carr unpubl. data).

Current conservation status

Listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*.

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2003).

Categorised as Endangered 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

The taxon is a shrub to 2 m high. Leaves ovate, 3-6 cm long, to 4 cm wide, obtuse, obtuse to rounded at base, fawn-tomentose beneath (VicFlora 2019).

It resprouts post-fire, and there is some suggestion that plants sucker from the roots, however that is not substantiated and not reported elsewhere in *Correa* taxa. Plants are outbreeding and self-infertile, and reproduce exclusively by seed. Pollination is obligatorily ornithophilous by honeyeaters, especially the Eastern Spinebill. Primary seed dispersal is ballistic at 3-5 m, and secondary dispersal is by ants at not more than c. 20 m or, by inference, flood events. Gene flow is not more than several 100 m by pollen, c. 20 m by seed due to ants, or downstream at greater distances by floods. A long-lived seed bank accumulates in the soil. Recruitment is continuous, judged by the uneven-aged plants in populations, but pulsed after fire (extrapolated from other *Correa*). Plants have no chemical or mechanical defences against mammalian browsers of foliage.

Generation Length

The generation length of *Correa lawrenceana* var. *genoensis* is inferred to be 60 to 80 years. This is based on *C. cogenors* and *C. lawrenceana*, and plants observed in the wild and in cultivation.

Distribution

The taxon is very rare and restricted to the lower Genoa and Wallagaraugh Rivers in the far east of the State (VicFlora 2019). On the Genoa River it grows from the head of Mallacoota Inlet upstream, to near the NSW border and in NSW at Redstone Creek, a tributary of Genoa River just north of the NSW-Vic border.

Habitat

The taxon occurs in riparian forest or riparian shrub dominated by eucalypts on often narrow sandy/silty alluvial terraces.

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Threats

The various threats affecting the taxon include weed invasion, especially by *Rubus fruticosus* spp. agg, one in 100 year or similar flash-flood events, browsing and mechanical damage by Sambar Deer (*Rusa unicolor*) and other deer taxa, and browsing by Black Wallabies (*Wallabia bicolor*).

Climate change impacts affecting the taxon include decreasing rainfall, higher evaporation, increased intensity of storm events, and increased frequency and intensity of fires. One in 100 year flash floods or rare events of similar magnitude may result in massive transformation of the riparian environment (G. Carr pers. obs.), as occurred in February 2007 on the Wellington River in the Licola region over many kilometres, following very high rainfall in the catchment. The flash flood resulted in the complete scouring and loss of the riparian environment down to bedrock, including all vegetation, even massive trees, a vast amount of rocks, and alluvial terraces. A comparable event in the Grampians in January 2011 had the same transformative result (Carr pers. obs.) in the loss of all riparian vegetation and scouring down to bedrock over many kilometres. Such an event on the Genoa River would likely eliminate this taxon.

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 Critically Endangered

The population reduction over the last 180 to 240 years is inferred to be 55 to 85%, based on (b), (c) and (e) above.

The bushfires of 2019/2020 are believed to have impacted 86% of the taxon's modelled habitat, with 33% affected by high intensity fire. The taxon is sensitive to fire and is likely to have been significantly impacted, although the degree of damage is yet to be determined.

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Eligible under Criterion A3 as Endangered

The population reduction over the next 100 years is projected to be 50 to 70%, based on (c) and (e) above.

There is likely to be an ongoing decline based on the impacts of current threats, especially weed invasion and Sambar Deer browsing.

Eligible under Criterion A2 as Critically Endangered

The population reduction over any 180 to 240 year period, including both past and future (up to 100 years in the future) is inferred to be 55 to 80%, based on (b), (c) and (e) above.

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 28 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA). The EoO has been made equal to the Area of Occupancy (AoO) to ensure consistency with the definition of AoO as an area within EoO.

The taxon is inferred to have two locations. The same threats apply to the populations on the Genoa and the Wallagarough Rivers, and may apply equally, or one river system might be affected more than the other.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the impacts of the identified threats.

Eligible under Criterion B2 as Endangered

The AoO across the taxon's range is inferred to be 28 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 two locations, 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:

Eligible under Criterion C2 as Endangered

It is estimated that there are 100 to 170 mature individuals. This is based on observations by D. Cameron in consultation with Kerry Seaton (25 June 2010).

The number of mature individuals is inferred to continue to decline, and the number of mature individuals in each subpopulation is less than 250.

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 D as Endangered

It is estimated that there are 100 to 170 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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