

Threatened Species Assessment

Correa backhouseana var. *backhouseana* Coast Correa

Taxonomy

Correa backhouseana var. *backhouseana* Hook.

C. backhouseana var. *backhouseana* is one of three varieties, two of which are in other states. All need to be raised to specific rank (Carr unpubl. data).

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criteria B1ab(ii,iii,iv,v)+2ab(ii,iii,iv,v); C1

Species Information

Description and Life History

Rounded shrub to 2 m high; branches smooth. Leaves coriaceous, broadly elliptic to ovate, 1.5–3 cm long, 6–18 mm wide, apex obtuse, base obtuse to subcordate, upper surface smooth and glabrous, lower surface densely tomentose, margins entire, flat or slightly recurved; petiole 2–3 mm long. Inflorescence 1–3-flowered, terminating short branches; pedicels 5–10 mm long, tomentose; bracteoles submedial to basal, linear, deciduous. Flowers usually pendent; calyx hemispherical, 3–7 mm long, truncate to gently or deeply undulate and then with recurved margin, densely fawn-tomentose; corolla broadly cylindric, c. 2.5 cm long, cream, petals fused; stamens just exerted, filaments widening at base. Flowers winter–summer (VicFlora 2016).

The taxon is likely to be a post-fire resprouter, with a longevity of 50-100 years. Its reproduction is exclusively by seed, and its plants are monoecious and obligatory outcrossing. Its seeds are dispersed by ants, but only several 10s of metres, and pollination is by birds (nectar reward), especially Eastern Spinebills and New Holland Honeyeaters. Gene flow is limited to pollinator flight distance, and not to seed dispersal. Post-fire recruitment from soil-stored seedbank is very significant.

Generation Length

The generation length of *Correa backhouseana* var. *backhouseana* is suspected to be 60 to 80 years. *In situ* plants can live at least 47 years (Geoff Carr pers. obs.) but likely much longer.

Distribution

The taxon is confined to coastal cliffs to the east and west of Cape Otway (Princetown and Glenaire).

Habitat

The taxon occurs in dense coastal shrubland/herbaceous mosaics on substrates derived from complex geology: Cretaceous sandstone/siltstones, Tertiary and Quaternary sediments, and Calcarenite. It is found on eastern and southern aspects, and its sites are quite mesic. The taxon does not occupy secondary dunes.

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Threats

Occurrences of the taxon that exist only 1 m above high tide may be significantly affected by climate change related sea level rise, though other population on cliffs will be unaffected. Coastal erosion with higher sea level is predicted to rise a minimum of 80 cm by end of century.

Weed invasion imposes a threat, especially the large shrub *Coprosma repens*, and smothering by associated indigenous taxa such as *Tetragonia implexicoma* and *Hibbertia aspera*.

Browsing is also a threat, as the foliage is highly palatable to wallabies and deer, particularly 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> <ul style="list-style-type: none"> (a) direct observation [except A3] (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat (d) actual or potential levels of exploitation (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites 			

Evidence:

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 100 years is projected to be 20 to 50%, based on (c) and (e) above.

The taxon's habitat is apparently becoming progressively unsuitable, and recruitment is considered to be a rare event. Over the 47 years since it was first recorded in Victoria (Parker River population) there has been no recruitment and some mortality (Carr pers. obs.). These conditions are extrapolated to the other populations. The other identified threats pose a problem.

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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 Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 8 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA). The EoO has been made equal to the AoO to ensure consistency with the definition of AoO as an area within EoO.

The taxon is inferred to be severely fragmented, based on its limited dispersal ability.

It is inferred to have 1 location, and has a continuing decline in (ii), (iii), (iv) and (v) above due to the identified threats. The habitat is apparently becoming progressively unsuitable, and recruitment is considered to be a rare event.

Eligible under Criterion B2 as Critically Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 8 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 (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 C1 as Endangered

It is estimated that there are 100 to 500 mature individuals. The current population is based on 12 plants in a subpopulation known to occur to the east of Cape Otway and estimated other subpopulations west of Cape Otway.

There is estimated to be a continuing decline of 20 to 50% within 2 generations.

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 500 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.



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Coast Correa

VicFlora (2016). Flora of Victoria, Royal Botanic Gardens Victoria: *Correa backhouseana* var. *backhouseana*.
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