



Eremophila polyclada Twiggy Emu-bush

Taxonomy

Eremophila polyclada (F. Muell.) F. Muell.

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

Criterion C2a(ii)

Species Information

Description and Life History

The taxon is a dense divaricate shrub to c. 3 m high, usually glabrous; branches non-tuberculate. Leaves alternate, scattered (defoliating in drought), linear, mostly 1.5-5 cm long and 1-3 mm wide, glabrous, often viscid when young, usually acute, margins entire. Inflorescences 1(-2)-flowered; pedicels 1-2.5 mm long, straight. Flowers zygomorphic; sepals ovate, 3.5-7 mm long, acute, imbricate, green; corolla 20-35 mm long, glabrous outside, partially villous inside, pinkish, spotted, upper lip 2-lobed; stamens 4, included, anthers reniform; ovary glabrous, style glabrous. Fruit narrow-obloid, 8.5-13 mm long, 4-6 mm diam., fleshy, splitting near apex, glabrous, greenish. Flowers mainly October -May (spasmodically throughout the year). (VicFlora, 1999)

Regeneration is flood-dependent. Suckering is very rare. Isolated plants are considered normal in Victoria (where it is decidedly at edge of range). Individuals are moderately long-lived once they have reached maturity.

Generation Length

The generation length of *Eremophila polyclada* is inferred to be 5 to 50 (midpoint 20) years. The taxon has moderately long-lived adults. It is estimated that individuals bloom and set seed at 5 years.

Distribution

The taxon is scattered on higher river terraces adjacent to the Murray River in the far north-west Victoria, west of Mildura only.

Habitat

The taxon occurs in localised patches (or sites) on river terraces (in Victoria), on very fine-grained, somewhat sodic soils. Such sites are very infrequently flooded and somewhat saline, though not highly.

Threats

The taxon is threatened by a lack of extensive riverine floods. The specific occupied sites may only very rarely be flooded, but lower floods fill the soil profile, raise the local water table and thus enable isolated areas to become waterlogged from local rainfall only. Adjacent low dunes often support high rabbit populations, which graze on the clay pans and lower (in the catena) sites. All occurrences outside declared reserves are threatened by stock grazing and locally by pig rooting throughout.

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 A2 as Endangered

The population reduction over the past 15 to 150 years is suspected to be 50 to 70%, based on (c) above.

This is based on the loss of suitable habitat, lack of floods and the impacts of stock and rabbits.

Eligible under Criterion A3 as Endangered

The population reduction over the next 15 to 100 years is projected to be 60%, based on (c) above.

This is based on a lack of peak and extensive flooding and the taxon's palatability to feral herbivores.

Eligible under Criterion A4 as Endangered

The population reduction over any 15 to 150 year period, including both past and future (up to 100 years in the future), is suspected to be 60 to 70%, 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 B as Endangered

The Extent of Occurrence (EoO) is estimated to be 711 km², based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The Area of Occupancy (AoO) is estimated to be 42 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

Any two of (a), (b) or (c) above are also satisfied.

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>	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)
<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:

Eligible under Criterion C2 as Critically Endangered

It is estimated that there are 30 to 150 (midpoint 100) mature individuals. There are few individuals in each occurrence in Victoria. The taxon is a large, perennial, distinctive plants that is not easily overlooked.

The number of mature individuals is inferred to continue to decline, and the percentage of mature individuals in one subpopulation is 90-100 %.

The taxon is subject to continuing decline in population size due to the identified threats, notably feral pests (rabbits and pigs). Control is sporadic and only moderately successful.

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:

Eligible under Criterion D as Endangered

It is estimated that there are 30 to 150 (midpoint 100) mature individuals.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

Chinnock, R.J. (2007). *Eremophila and Allied Genera A Monograph of the plant family Myoporaceae*, Rosenberg, Dural, NSW.

DEPI (2014) *Advisory list of rare or threatened plants in Victoria - 2014*. Department of Environment and Primary Industries, Melbourne. Retrieved from:

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