



Roepera angustifolia Scrambling Twin-leaf

Taxonomy

Roepera angustifolia H. Eichler

The taxon was previously referred to as *Zygophyllum angustifolium* (VicFlora, 2019).

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria A2bc; B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a weak ascending perennial subshrub 30-60 cm high; stems slender, sometimes scrambling over taller plants and reaching 150 cm in length. Leaves 15-40 mm long, green; leaflets articulate at base, linear to narrow oblong-elliptic, 10-25 mm long, 2-3(-4) mm wide, fleshy, apex acute; common petiole narrow. Sepals 4, ovate-lanceolate, 3-5 mm long, deflexed or spreading in fruit; petals 4, narrow-obovate to elliptic, 4-8 mm long, apex rounded, pale yellow; stamens 8, filaments subulate, lacking wings. Fruiting pedicels 8-25 mm long; fruit a 4-angled loculicidal capsule, obconical, 6-9 mm long, drooping, truncate at apex with a short point; seeds 1 or 2 per cell. The taxon flowers mostly from June to February (VicFlora, 2019).

Generation Length

The generation length of *Roepera angustifolia* is inferred to be 25 to 30 years. This is based on a likely longevity of 15-30 years and field observations of low levels of seed recruitment, for example, at a mining rehabilitation site at Pooncarrie West in New South Wales. The taxon is moderately long-lived and potentially resprouts from the root system and lower stems following drought.

Distribution

The taxon occurs in far north-western Victoria (Eichler, 1990; VicFlora, 2019).

Habitat

In Victoria, the taxon is occasional in mallee scrubland and herbfield, mainly on calcareous soils (VicFlora, 2019). Quadrat data indicates that the taxon has a habitat range from Chenopod Mallee to moderately saline margins of *Tecticornia* dominated samphire saline discharged complexes but only marginal to saline flats. Field observations indicates that the taxon extends into sites subject to saline groundwater influence i.e., Chenopod Mallee, Belah Woodland, *Maireana pyramidata* shrublands and *Atriplex vesicaria* shrublands.

Threats

The taxon is inferred to be subject to continuing decline in habitat quality since the habitat range of the taxon is at continuing risk from rising ground water. This results in increased salinity, potentially exceeding the moderate

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salinity tolerance of the taxon, with an increasing risk of local population decline and local extinction. Weed invasion and herbivory are considered minor threats only. The taxon is not considered to be palatable to stock (Cunningham et al., 1992).

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 75 to 90 years is inferred to be 50 to 75%, based on (b) and (c) above.

Past decline based on suspected habitat loss due to post-settlement clearance to agriculture. Most land clearance has occurred since WWI, therefore arguably within the last 3 generations.

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

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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 Vulnerable

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 16,571 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be naturally and anthropogenically severely fragmented at both the subregional and landscape scales, with no known mechanism for long range dispersal

It is estimated to have 1 location. It has a continuing decline in (i), (ii), (iii), (iv) and (v) above, due to the continuing risk from rising ground water.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 95 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. The AoO includes records that have been transferred from the coastal species *Zygophyllum billardierei* to *R. angustifolia*.

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

It is estimated that there are 1,000 to 2,500 mature individuals, but other thresholds under this criterion have not been met.

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 Vulnerable

It is estimated that there are 1,000 to 2,500 individuals, and 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.

Eichler, H. (1990). Four New Species of *Zygophyllum* (Zygophyllaceae) and one lectotypification. *Telopea*, 4(1), 13-17.



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VicFlora (2019). Flora of Victoria. Royal Botanic Gardens Victoria: *Roepera angustifolia*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/3dd3fb28-3272-4c6b-b21d-df448f2e71ff>